WHAT THE WAR TEACHES ABOUT EDUCATION

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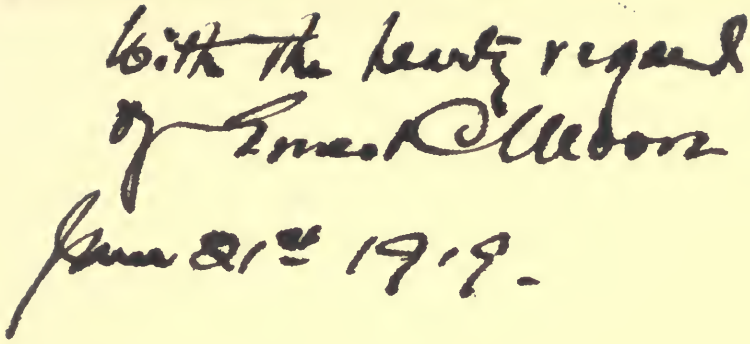

WHAT THE WAR TEACHES ABOUT EDUCATION

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WHAT THE WAR TEACHES ABOUT EDUCATION

AND OTHER PAPERS
AND ADDRESSES

BY

ERNEST CARROLL MOORE

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PREFACE

THE war has been the proving stage of two colossal experiments in education. The first began some forty years ago in Germany at the time that her autocratic government initiated its plans for the subjugation of the world. That experiment is the most remarkable demonstration of the power of teaching in the history of men. The second was the colossal undertaking in which the United States, profiting by the errors and successes of France and England, trained and equipped a huge citizen army and within a twelvemonth of the induction of its soldiers transported them to France and with them had begun the battles which brought about the destruction of the enemy. That is the most convincing proof of the possibilities of specific intensive instruction which the world has yet seen.

Both experiments magnify purposeful training. In Germany the ritualistic instruction in the so-called liberal arts, which we formerly relied upon to produce citizens of humanity and culture, went on side by side with an intense pounding in of patriotism. It did little to check the momentum which that purposive indoctrination attained. Purposive instruction in the very rudiments of civics, history, and geography had to be evoked in every army camp in the United States to make good the very manifest shortcomings of a schooling that had con-

tented itself with formal discipline and a more or less ritualistic occupation with school studies. If the war has taught us anything, it has taught us that general education, whether of the formal discipline type or of the merely aimless-keeping-company-with-studies sort, cannot be relied upon. We who teach must sharpen our purposes, for unless our students work purposively they do not work at all.

That, in its several phases, is the theme of the papers and addresses in this book. They were not prepared to be brought together in this way. The reader will find repetitions for which we must ask his indulgence. They are due to the fact that the volume is a collection of papers and addresses rather than a consecutive treatment of a unitary theme.

Our thanks are due to the *Educational Review* for permission to reproduce the paper on Contemporary Ideals in Education; to the *Yale Review* for permission to reproduce the paper Why We Get On So Slowly; to *School and Society* for permission to reproduce the matter in Chapters II, III, VI, VII, VIII, and IX; to *Education* for permission to reprint the paper on General Discipline; and to a score of friends for most helpful collaboration.

The great war has already taught us much about education; day by day it will teach us more for many years to come. It is far too early to finally assess its lessons. It is not too early to ask what they may be.

ERNEST C. MOORE

LOS ANGELES

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WHAT THE WAR TEACHES ABOUT EDUCATION

WHAT THE WAR TEACHES ABOUT EDUCATION

CONTEMPORARY IDEALS IN EDUCATION [1]

In these distressful days when each one of us at times feels that the way of life which we call civilized may be lost and forgotten, it is imperative that we take stock of the forces which we can employ to perpetuate it among men. Surely the name for our age is that which Fichte gave to his, "The Age of completed sinfulness." Such horrors as are now known, such suffering as is now felt, the race has never known before. Indeed if all the other wars, pestilences, famines, cataclysms, and devastations which have afflicted mankind since the beginning of recorded time were added together into one great horror, it is a question whether their sum total would equal this single one which goes on now. Have they who did this thing no pity, no bowels of compassion, no care for the one little life which is all we have that they make nothing of it and crush it out so ruthlessly? Surely colossal madness has done this, for sanity could not even imagine it. But no, it is all due to ideals, all the result of teaching.

[1] An address before the City Club of Chicago, May 3, 1916.

Yet there is another side to the picture. It has been met by something stronger than it is. Never before since history began has the irresistible and triumphant power of an idea so manifested itself as now. Thought is again made flesh and dwells among us, and we who are so fortunate as to be alive behold its power. Such devotion to the old fidelities, such eagerness to serve, such patience under suffering, such a sublime surrender of goods, of cherished plans, of friends, of self itself, that an idea may live, that an ideal may triumph, as takes place at every instant of time in Europe, this world has never seen before. We may indeed say to each other what Æschines said to his fellows who were alive in the day of Alexander, and we may say it to each other with better right than he said it: "We live not the life of mortals, but are born at such a moment of time that posterity will relate our prodigies."

When their Homer shall arise to tell of these great deeds as half-forgotten things, he will not sing of wrath or power of armaments or over-confident, long-labored efficiency. He will sing of ideals, of human hatred of wrong, of sacrifice for social laws, of irresistible love of liberty. These are invisible things, but they are stronger than visible things and determine them. Ideals are always that, they are personal; they exist nowhere but in minds; they do not float in the air or belong to things. They belong always to folks. They are the thoughts, the hopes, the plans, the resolutions of people. They are not fancies or opinions, but purposes, principles, resolves.

The ideals of this nation are the thoughts of what this nation is going to do, has got to do, that you and I and the rest of folks in it have, and the ideals of education in this country are the thoughts of what education is for, and must do, that you and I and the rest of folks in our land have.

I have sometimes fancied a visitor coming to Harvard University and asking to be shown the real university. One of the guides might take him into The Yard and point out the buildings to him and say these are the real university; or another guide might produce for him a list of the endowment funds and say this is the real university; or another one might show him a book which contains the history of the university: — Harvard guides are, I regret to say, rather too prone to do that. He might take him to Mt. Auburn and show him certain rather numerous plain and simple graves there, and say this is the real university, or might show him the roll of the alumni, or the assembled student body, or the faculty gathered in faculty meeting, or the laboratories, and the library; and I have imagined the visitor turning away in each case and asking: What brings all these together here? What is the purpose that built these buildings, that brought this money, that constituted this history, that assembled these professors both living and dead, that collects these students? Show me that, for that shapes all the rest, that is the real university. Or, I have imagined that same discerning visitor coming from Europe and asking to be shown the real United States, and when pointed to the land bounded on

the east by the Atlantic, on the south by Mexico, on the west by the Pacific and on the north by Canada, saying that was all here before Columbus came, yet he did not find any United States here. That is the territory of the United States. Show me the real United States. And next he would, perhaps, be directed to go to Washington and look at the White House and the Supreme Court and the assembled Congress, but would at once say no, that is the Government of the United States. Look then at all these 100,000,000 people, he would be told. But no, they are the people of the United States. I want to see what makes these states and what unites them. And Socrates-like he would then go about from this man to that saying to each of them, "Speak that I may see thee," and from what he found that they desired with all their hearts, souls, minds, and strength he would decide whether there is indeed any real United States. Ideals are our very life blood; they pay our debts; they send us to our work in the morning; they keep us from taking our neighbors' property, from turning destroyer and pillaging, burning, and trampling out lives.

You are that discerning visitor. You ask me to show you the real education of our country. You do not want to be shown the buildings, or the funds or the teachers or the textbooks or the students. This is to be no tabulation of plant, equipment, resources, personnel or results, no journey through a museum to look at specimens. It is the animating purpose of this great enterprise that you wish me to consider

and I most gladly comply, but with a reservation. France is a real thing; you can not touch it or see it or hear it; it is a mental thing, a desire, a thought, a determination that men by thousands set aside life for nowadays. Suppose you were to go among the soldiers at Verdun and among the women that work and pray for them at home and ask the question of each one of them, What is France? You would get strangely different answers. I, too, am a private, or at most a drill sergeant in a vast army. I can not speak with certainty for the others. I can tell you only what education is to me and what I believe it is to them.

Education itself is an ideal. When our ancestors were still "extreme gross," to use a phrase from Francis Bacon, they took no thought for it. Indeed we can imagine a world in which grown folks in cataclysmal selfishness practiced destroying all their young as soon as they were born. Our race has, you know, at various times and in different ways destroyed a good many of them. A race which followed that practice would soon die out. But why not? If we were in fact as completely selfish as many of our makers of opinion give us credit for being, we would not and could not care. But we do care. We want them to live. All education is rooted in that unselfishness, is grounded in that ideal. It is that something in us which makes us child-keepers, that makes schools and teachers and meetings like this, and child-labor laws, and horrible revulsion when young lives are wantonly trampled out.

Again, we can imagine a society in which every parent took the greatest pains to teach his child to lie, and to teach him to steal, and to teach him to kill, and to do no work for himself but to force others to do everything for him, to be a destroyer, to delight in anger, to value brawling, to indulge every passion as his right, to disobey all laws, to turn a deaf ear to all pleadings, to look upon compassion as cowardice, and not to fear death but to look forward to endless eons of joy in another world provided only that he took the precaution to die fighting. Such a training would bring up children to rend their parents and destroy each other. The result would be exactly the same as if the parents destroyed all the children at birth, only it would be longer in coming.

There would not be the slightest difference in the long run between this method of bringing up children and destroying them outright. But just this kind of education has been solicitously inculcated in various places and at various times in the world's history. Why is it not given now? It is, not all of it, but part of it, in every country. Why do you object to it? Because it threatens us, because it destroys lives. The education which we seek must not be of that kind. It must have just one object, to serve life, and one justification, that it serves it. By life we do not mean mere existence but a certain kind of existence. Our want of it is more real than anything else we know. For the sake of it men suffer wounds, are torn asunder, are impaled, yet count imprisonment, loss of possessions and agonizing death as little things beside the loss of their conviction

that the good of men must be served. For the educator that alone is the real thing. And the only reason we have such a thing as education at all is because of the value we put upon human lives. We talk much about our institutions of learning, about the subjects which we teach in them and about our devotion to the sciences. That is not what most of us mean at all. We use such phrases as "you must get knowledge for the sake of knowledge," "you must pursue science for the sake of science," but they are for most of us only a circumlocution. What we are really concerned for is the good of folks. In the service of education it is, alas, much easier to assign reasons which will satisfy our fellows and quiet objections than reasons which will do the business and produce the fruit of helping men to new and better experiences. What we are concerned with is knowledge as a means, not an end. Some time ago Professor Dewey told me that when he began to write his last book on the philosophy of education he made what was to him the startling discovery that all philosophy is philosophy of education. For, what other reason can there be for striving to have folks learn philosophy than that they may learn to think about life sanely? Is not the same thing true of all literature, all art, all science, all industry, all government, all religion, all morals? Have we any reason for caring for them save that our efforts in them conserve and augment human forces and make life a better thing? Has industry any other warrant than the production of goods for human use? Has science any other motive than

that indicated by its motto, "I serve"? Has religion any other purpose than to inculcate helpful lessons about God and the life of our own souls? Has government any other reason for existing than to devise and secure the welfare of folks? All these exist to teach men to be free. I am therefore going to be more demanding than Professor Dewey was. I am going to say that all literature, all art, all science, all government, all religion is for education, that they have no other reason for existence than to teach folks to live well. We who teach are fabricating the future. We must build it out of all the discoveries concerning the life of man that man has made.

But I must not, without stating the other one, allow you to commit yourselves to the view that all knowledge is nothing but a series of discoveries which men have made as to the best ways to think and act in order to live well here upon this planet; that it has all grown out of the race's experimenting with life, that every single one of its formulations is only a body of recipes or guide-board directions advising us what to do or which road to take when certain conditions are met, and that every book is a guide-book to a country that the mind of the reader is likely to visit. This is the pragmatic view of the nature and function of knowledge, the only view which, as I believe, makes education either worth while or possible. For if all philosophy is philosophy of education, all education is an outcome or effect of philosophy and this philosophy of consequences is the only one which provides the parent and the

teacher with a working definition of knowledge, which will tell him how to distinguish unerringly what lessons the child must learn from the infinite mass of pseudo-lessons which he might spend his time upon and be none the better or wiser for having done so. Let me give you some illustrations of just this need for distinguishing knowledge from facts, for selecting the matter which children should be taught from that which they should not be taught. This selection must be made in every subject and the principle or ideal of utility is the only principle which helps us to make it.

All children who go to school in our country must be taught to spell. But there are 400,000 words, more or less, in our language. Shall they be taught to spell all of them or only a part of them and if only a part, which part? What does a knowledge of spelling mean? What does the teaching of spelling require the teacher to do? There are two views: According to one, spelling is spelling, and to be a good speller means to be able to spell every word, or since that is absurd, almost every word and at least most of the hard words in the language. Those who take this position say that spelling is for the sake of spelling, the more of it one learns the better. The other view is that spelling is a very practical matter, we must all take pains to spell the words that we write. Each one of us has at least four vocabularies and of these our writing vocabulary is by far the smallest. The words which folks are likely to use in letters after they leave school, we should take particular pains to teach each child to spell while he is in

school. That number of words careful tests have shown to be no more than about 2000, while the number of words which everybody uses is hardly more than 500. Now if we should follow the Cleveland plan of putting but two new words into each spelling lesson together with eight old ones, since there are more than 150 days in each school year, we could perhaps in four years teach children to spell all the words which they are likely to have occasion to write, and to spell them correctly. As soon as we take the position that spelling is not for spelling, but for use, we can teach it successfully. As long as we cling to the view that spelling is for spelling we are so confused and uncertain that we get nowhere and no one is pleased with our attempts, ourselves and the children least of all. That we are not pleased may make but little difference, but that the children should because of our misguided efforts learn to hate learning is a tragedy more terrible and devastating even than the world war.

An examination in geography was given in Boston a little while ago to 594 eighth grade students, 165 third year high school students and 86 normal school students. The list which was submitted to them was carefully prepared and included such questions on the geography of the United States as: Locate New York City on the map. Locate San Francisco on the map. Why do the states just east of the Rocky Mountains receive less rain than Massachusetts? Explain the way in which the flood plains of the Mississippi river have been formed. Why are these flood plains good for agriculture? And on the geog-

raphy of Europe such questions as: Locate on the map two seaports of European Russia. Why does England import large quantities of wheat? Why has Germany become very important as a manufacturing country? Out of the 845 pupils tested on the geography of Europe not a single pupil passed. In the test on the United States 8.7 per cent of the elementary school pupils, 4.8 per cent of the high school students and 1.1 per cent or one of the normal school pupils passed. Your conclusion is, doubtless, that they were either pretty poor students or that their teaching had been poor. That is not my conclusion. A few days after this test had been given I was present at a meeting where these results were discussed. Everyone had practically reached the conclusion which you just now reached, when one of the men present asked, "How many facts would you say are brought to the attention of a public school child in his study of geography each year? As many as 10,000?" "Yes," was the reply, "fully as many as 10,000." When we study geography for facts you see we do not learn geography.

The view that we study spelling for the sake of spelling, geography for the sake of geography, science for the sake of science, and knowledge of all kinds for the sake of knowledge, is due to the anti-pragmatic philosophy known as intellectualism. It says that the highest function of our minds is to know in order to know — that a subordinate function of them is to know in order to do. That knowledge in its truest form is knowledge wholly unmixed with volition, or knowledge that as somebody has said, thank God, no-

body can possibly do anything with. "God hath framed the mind of man as a glass capable of the image of the universal world. . . . For knowledge is a double of that which is," said Bacon. According to the pragmatists God has done nothing of the sort, and we would be enormously handicapped and wholly helpless if he had. The fact that it is impossible for us to attend with the same intensity to everything which goes on, indicates that the mind is not a mirror to reflect images of everything which is, but a selecting device which works by picking out that which is worth while from that which is not worth while. This philosophy, then, commands educators to abandon their attempts to treat all that is known as equally valuable, and to impart universal knowledge to the young. It says that knowledge for the sake of knowledge, science for the sake of science, or art for art's sake, are monstrous shibboleths, that only confusion, misdirected effort and a wretched wasting of life result from them, that knowledge, science and art are all for man's sake, are tools, and must never be hypostatized into self-existent realities.

So much for ideals about what we should teach. Next comes the question, What result should we seek when we teach it? What does teaching these various lessons that the race has learned, and values, do for the learner? Or, in other words, what is education? Here so many ideals are held by teachers that I can not examine them all. I will select three for your consideration. The first is that education imparts knowledge — that teachers have it and students do not have it and students go to school that

teachers or textbooks or both together may pass it over, hand it out, impart it or deliver it to them. Many people think schools are knowledge-shops, where pounds, ounces, pennyweights of knowledge are transferred to the young. They do this perhaps because they see teachers constantly engaged in testing their students to find out how much of what has been delivered to them they retain and can hand back again. But if you will stop for a moment and consider what sort of a thing knowledge is, you will see that no teacher can hand over or share his knowledge with his pupil any more than he can hand over or share his headache or his toothache with him. My knowledge is the body of sensations, perceptions, memories, images, thoughts, feelings, and volitions that I am aware of, somewhat reduced to order, classified and arranged so that when something happens that calls for a reaction from me I am able to make that reaction and do what should be done next. If you speak to me in English I can answer you in English, for I have a knowledge of English words, but if you speak to me in Italian I can not answer you in Italian, for I have no knowledge of that language. If you ask me what 2 and 7 and 9 make I can tell you, but if you put me into the midst of a battle and ask me what to do next, I can not tell you, nor can I do it if you give the commands, for I have not learned how to work by that action-system. We go to school to learn to use our own minds in the several most important ways in which the race has found it necessary to use minds, to learn to work by the action-systems that the race has

learned to prefer. It is always our own thoughts that we learn to work with. If the teacher tells me that three and five make eight, I must think three and then five and I must combine them. If she says that Christopher Columbus discovered America in 1492, I must form a notion of what is meant by Christopher Columbus, by discovered, and by America, and I must work out or make my own notion of what 1492 means. The teacher does not give me her thoughts. She can not. Nobody can. All she can do is to put me into a condition in which I must generate and make use of my own.

The mistaken notion that education is the imparting of knowledge, the delivering or conferring or handing out of knowledge, with all the confusion and waste that follows from it in schools, is due to certain foolish statements which we allow ourselves to make concerning language. We say that it imparts thought or vehicles thought or expresses thought or conveys thought. It does nothing of the sort. Thoughts can not be sent from one person to another. They never pass through the air. They do not ride on words or leave us when we move our lips and disturb the air about us in such a way that that disturbance reaches the tympanum of an auditor. If I speak to you, you feel a sound, but you make your own meaning to fit that sound. If the sound is of a language strange to you, you say you can not make out what I mean. Language is only a system of signals. When I can make them out, I can understand what you mean, but the thought which I make to fit your sounds, your words, is my own thought,

not yours. In place of saying that language imparts thought or conveys thought, we should say that language demands thought, or requires thought or necessitates thought or arouses thought or provokes it. The teacher is a provoker of thought, not one who purveys or supplies it, and the thought and knowledge which the student makes are his own. Education then simply puts him into conditions in which he, using what men have said and done in past time and what men say and do now as raw material for his own constructing, makes up his own mind about the matter and so builds up his own knowledge.

The other mistaken ideal of education to which a great many teachers devote themselves and their students, as I believe altogether in vain, is not concerned with the imparting of knowledge but with the creating of mind. Those who follow this ideal seem to say that our minds are very imperfect things at birth, that they must be made over, improved, renovated, disciplined, sharpened, drawn out, made supple, developed and perfected. Do you remember the story of the man who went about the streets of an ancient city crying "new lamps for old"? You say there never was such a man. Do not be too sure about it. The professors who hold this view go about crying "new minds for old," "new minds for old." They say that certain studies are valuable not because we can not possibly get along without knowing their content, but because they form a sort of grindstone on which we must sharpen our intellects. I believe that this doctrine is a superstition

and a baneful one, and that no other educational ideal begins to take such a toll of young lives as this one does. It is an idol which is worshiped chiefly in our colleges, but they make both enforced and voluntary converts to it in the high schools and voluntary converts to it in the elementary schools of our country. Ask the teacher of spelling or arithmetic or geography why he believes in spelling for the sake of spelling, or arithmetic which no one outside of school uses, or geography which one will never again refer to in life, or grammar the use of which no student understands, and he will tell you that it is because these lessons are good for the mind, they strengthen it, make it facile, increase its power and sharpen the wits of the young. But no teacher ever has to get inside the mind or do any burnishing or repair work there, no teacher ever has to add any cubits to its stature or build any additions to it. That simply can not be done. "Learning Greek teaches Greek, and nothing else; certainly not common sense, if that have failed to precede the teaching," said Browning. In the Harvard Club in Boston there is a room set apart for the use of the graduates of the Medical School, and over the fireplace in that room is an inscription, a motto which states in a sentence the ideal, the philosophy of the medical profession. It is this: "We dress the wound, God heals it." Now if we were to try to make a sound ideal for the teaching profession, a philosophy which we could all unite in following, what form should it take? This I think: "We train people to use their minds; God makes them."

That training is always specific, never general. It is always learning to do this, that or the other particular thing, never learning to act in general.

What specific things shall we train them to do? You see, just as soon as you give up intellectualism with its mirror-up-to-nature ideal and its knowledge-for-the-sake-of-knowledge slogan, you must take the position that knowledge is not a luxury, but an indispensable human necessity. It is not having it that makes it valuable, it is doing by its aid or with it. Knowledge therefore becomes different from facts; it is what we do about facts; it is learning to work with facts, making them come our way or getting ready for them by foreseeing them. That is, knowledge, real knowledge, is always a kind of skill. The person who has it is different from other folks in what he can do. To know French means to speak, write and read French, to know ethics means to be constrained to ethical thought and action, to know science means to maintain the suspended judgment rather than the snap judgment, to collect the necessary information and try out our mental conclusions before we assert them or act upon them. Though studies have curiously different kinds of names, some of them names ending in *ing* and other names ending in *ic*, *y*, or *ry*, that is due to some false notions on the part of the men who named them. They are all *ing* studies and serve no other purpose than to train us to use our own minds upon the matters of which they treat in the ways that the race has thus far found it most useful to work in its struggles to master these matters. According to this ideal every

child goes to school for exactly the same reason that an apprentice goes to a blacksmith shop, *i.e.*, to learn to work with or operate or use certain highly important social tools which the race has wrought out with which to perform its work.

Every society teaches its children to think about the things which it cares for, to do the things which it values. The school is simply society's most conscious effort to keep itself alive and to renew itself. It can not be the same in the different countries, for it is the chosen agency for realizing the national ideal. When Socrates was in prison awaiting execution his friend Crito came to him and said: I have arranged everything. The prison doors are open. You can escape and cross the frontiers of Attica to safety if you will. But, said Socrates, nothing is worth doing that must not first be thought about. Let us think about this. Injustice and death are of slight concern to a man who is innocent, but doing injury to his own soul is of great concern. And then, as you will recall, he imagines the personified Laws of Athens coming to him and asking him if he can be planning to destroy them. They say to him, "Did we not bring you into existence? Was it not by our authority that your father married your mother and begat you? Are not those of us reasonable which commanded your father to train you in music and gymnastic? . . . No one of us has hindered you or any other citizen after he comes of age and has examined our management of the city and finds that it does not please him from taking all that belongs to him and going wherever he pleases. . . .

But whoever among you who after examining and seeing how we give judgment and manage the other affairs of the city, chooses to remain, pledges himself in very deed to abide by us and perform whatsoever we command."

"The greatest discovery ever made by man," says Sir Henry Jones, "was made by the Greeks when cutting themselves free from the traditions of the ancient world they alighted upon the conception of a civil state where citizens should be free. The most momentous experiment of mankind is that of carrying out their conception to its ultimate consequences in a true democracy." That most momentous experiment we are carrying out. The means which the Athenians, though not of our blood, our true ancestors, chose, are the means which we choose. Our laws compel the parent to have his child trained in the elements of education. In this we try to carry on the early Athenian practice, to put into effect the advice of Plato and of Aristotle and to realize the effort which Charles the Great and Alfred the Great, with unerring vision of what is necessary to a state, made in vain. The child does not belong to his parents, but to the state, to organized society as a whole. The parents have duties to him but no property in him. He must, whether his parents are willing or are not willing, spend his earlier years as an apprentice to certain social activities which he will have to continue to perform as long as he lives. He must be taught to read and write and use the language of our country and work with the aid of numbers. He must build up his own notions of the

world, become familiar with the songs and stories of his race, and come to a realizing sense of what sort of an undertaking he has inherited and what has already been attempted and accomplished in it before he came.

These things have become so much a matter of second nature to us that their real meaning is overlooked. Is it of overwhelming importance to the people of the United States that every child shall learn to read? Well, let us see. Many things are happening in this world, and in the lurid light reflected from other lands we are able more clearly to discern the features of our own life. In the United States 96 per cent of the people can read, in Mexico 80 per cent of the people can not. Because of that, and because of that only, certain things happen in Mexico which could not possibly happen in the United States. One of them is that spoken words have an undue power there. If an orator stands on a street corner in Mexico and makes a fiery speech to the people telling them that their liberties are being stolen from them, that they must arm themselves and march against the tyrant and destroy him, the chances are perhaps about 90 to 10 that a number of them will rush to arms at once and a new revolution will be on. Why? Because not having the means to be critical, little arises in their minds to challenge and dispute that which they hear so convincingly uttered. Not being able to read they are the unwilling dupes of unprincipled adventurers who trade upon their eager credulity and buy and sell them to suit a private advantage.

Surely the ability to read the yellowest journal in existence would make one more self-protective than that. Education exists to make men free, and teaching folks to read arms them with a means of self-protection by which they can checkmate the schemes of impostors. With a free press it makes public opinion possible. Teaching folks to write is not so clearly indispensable, but it does enable us to talk to our friends who are beyond the reach of our voices, it provides a nearly indestructible memory and is a requisite in many callings. Teaching them to number gives a sense of security against being cheated in the simple reckonings of life and enables us to understand the social arrangements of time and space.

These are the three R's. The cry perpetually goes up in this land, now from this critic of the public schools, now from that, that they constitute the whole duty of elementary education, that whatsoever is more than these cometh of faddism and should be driven out. Is this sound? Let us go back to Mexico. John Stuart Mill used to say that social and political theories can not be tested in a laboratory, they do not lend themselves to experimental control. Yet political theories do display themselves upon a great stage, and if we will but take note of what is happening all about us, we shall find that it corrects our own theories and tells us much about our problems. Even the person among us who is least informed about Mexico must have concluded from what he has read that one trouble with that unhappy country is lack of education. "Schools for the

people" is a cry of the revolutionists, and despite the fact that they claim to have created fewer schools than they destroyed and that these schools lead but a precarious and fitful existence, the problem of Mexico no matter what else happens, whether home recovery or intervention, must be solved by her schools. What do we mean when we say that? What is the problem of Mexico? It is an Indian country. Of its 16,000,000 people 38 per cent are pure-blooded Indians, 43 are mixed, and but 19 per cent are whites. When Cortes came there in 1519 he found the Indians living in tribes throughout the land and having few relations with their fellows of other tribes, save to make nearly incessant war upon them. Mirabeau said a hundred years ago that war is the national industry of Prussia. Well, war was the national industry of Mexico. When the Spaniards came they did not fuse the Indians into one people. They were not one people themselves. Even to this day the king of Spain is not crowned king of Spain, but king of the Spains. Catalonia, Castile, Aragon, Granada and the other Spains sent their contingents to Mexico. They grouped themselves together, the men of each of the Spains by themselves in different parts of the country; they maintained their own customs and their differences, and thus upon the antagonisms and repellencies of the ever-warring native tribes were superimposed the antagonisms and repellencies of mutually jealous conquerors who had never been one people. These differences did not heal themselves; they multiplied. The ills of Mexico are due to lack

of unity. "The trouble with us," says one distinguished Mexican, "is that we can not trust each other." The problem of Mexico is to create unity, to bring it to pass that her people shall learn to value the same things, to desire the same things, to hope for the same things, to strive for the same things; that is the problem of Europe also, and that is the problem of the United States.

Each one of us is born a being separate from his fellows and from the surrounding things of nature. We must make two conquests and keep making them as long as we live. One of these is the conquest of nature, the other is the conquest of social relations. The conquest of nature is relatively easy, but the conquest of social relations is so difficult that as yet but a mere beginning has been made in it. The earth produces food enough and to spare for all of us, but at this moment hundreds of thousands starve and millions go to death in paroxysms of unspeakable anguish. There is but one way out of it. It is the final word of religion, philosophy, literature, political theory and morals. It is the problem of education; men, all men, must learn that they are brothers.

How can we be brought to value the same things, to desire the same things, to hope for the same things and to strive for the same things? The problem of Mexico can not be solved by opening schools throughout the Republic and teaching every Mexican boy and girl merely to read, write and cipher, in them. Many of the most frantic destroyers of lives there have had that training.

Teaching them to read may decrease their over-susceptibility to deception, but no amount of zeal in instructing them in the three R's only or of instructing our people in them will convert them into one people, with a common consciousness, striving for a common ideal and helping each other to realize it. The state, said Aristotle, is a mutual undertaking of friends. It does not exist for the sake of alliance and security from injustice nor yet for exchange and mutual intercourse, but for the good life. Animals and slaves can not form it, for they have no share in happiness or in a life of free choice. Christianity enlarged this Greek lesson to include the entire family of mankind. God is the Father of all; all are his children; life is the mutual effort of common humanity to assist each other, to value the same things, to desire the same things, to hope and work for the same things. Only as the state enables its citizens to do this can it be a state, and only as the people of a nation assist the peoples of other nations to do this can it be a nation.

Unity of desire, unity of plan and aspiration, unity of resolution and of action, the lesson of unity must be taught in the schools of Mexico, and in the schools of England, France, Germany and the United States, and it must be the chief lesson which is taught there. In the light of this principle we see what the real studies are. They are not reading, writing and arithmetic, they are not the sciences or mathematics, valuable as these all are. They are not the languages studied merely for their disciplinary effect. They are those studies that

take us up, as it were, on a high mountain and show us the kingdoms of this world, and the great pulsing vivid panorama of human effort and striving that goes on in them. The mission of these studies is to make us ever mindful of what in its long struggle mankind has attempted, hoped for, and done, that — in that most moving phase from the trenches — we may "carry on." I have often thought and often said if I were compelled to choose from among all the studies we teach one and only one for my child to learn, I'd rather have him learn the songs of our country than any other thing; for there are certain sentiments too precious and too dear to be intrusted to the everyday forms of communication or even to be intrusted to that extraordinary form which we call poetry. We give those sentiments a more compelling power over us. We sing them and thus secure for them the peculiar privilege of saying themselves over and over again in our hearts. I'd choose these songs first, and after them poetry, stories, history, geography, ethics. In later years philosophy, literature and science would assert their claims. Disciplinary studies would be banished. Physical training would call for more attention even than it got in Greece. Each child would be taught the elements of a trade. No child would be taught anything that he could ever as long as he lived feel that he was through with. Efficiency would be the object, but not that lop-sided and deformed efficiency that comes from the ability to control things only, but that larger efficiency that seeks first the welfare of the kingdom of men. What is taught

would not be handed down on authority. Instruction would not be a militarizing of the minds of the young. Each student should use his own mind, should think his own thoughts, should put his own values upon things and men and be convinced by his own conviction. Each student would study reading in order to read, arithmetic to become an arithmetician, geography in order to be his own geographer by continually studying the earth and man's relation to it, history that he might learn to work with and by the aid of historic facts, science in order to himself be scientific by employing the methods of science, literature that he might make out its message and be his own critic and appraiser of that which is written, and ethics that he might make up his own mind about human conduct and guide his life accordingly.

He must of course become self-supporting, but it is even more important that he become society-supporting. These are indeed but two aspects of one and the same requirement. He must pull his own weight and must meet the standards of living, but he must also do his part in improving and raising the standards of living. It is not enough that he be trained to fit into his environment. He must be trained to make it over into a better social environment. There is, in short, but one ideal of education. It is, and everywhere must be, the process by which each child of the race guided by his own interest, employing his own attention, and using his own mind in comprehending the process of human living, becomes a person who thinks, desires and acts as the embodiment of social laws.

THE CHILD IN MODERN SOCIETY [1]

SIGMUND ENGEL begins his book "The Elements of Child Protection" [2] with the statement: "In the struggle for existence among the nations, that nation is the victor which consists of the greatest number of individuals best endowed with bodily, mental and moral health. No national entity can resist the attacks of others if its numerical strength is comparatively small." According to this view children must be protected in order that the state may be victorious. The place of the child in the modern societies which look at things this way is that of prospective cannon fodder. Our whole being cries out against such a doctrine. National existence is not the end but the means to the life of individuals. We do not exist that the United States may be. It exists that we may be. Men are not work animals owned by masters who have the power at will to send them to the slaughter.

The great war which is now devastating the earth is a struggle between two radically opposed conceptions of life, between two irreconcilable philosophies. Their opposition is as old as Sparta and Athens. The one conceives man as belonging to the state, as its personal property with which its officers

[1] An address before the Council of Social Agencies, Los Angeles, Calif., June 29th, 1915.

[2] The Macmillan Co., N. Y., 1912.

may do what they please; the other conceives the state as belonging to the men who compose it as an instrument designed to minister to their needs, an organization to secure for all of us certain things which are indispensable to each of us which we can not secure for ourselves.

The war is searching the hearts of all living folks, forcing them to decide what they believe men are for, what human life really is, what states may do with their citizens, and what citizens should do in states. There was a time when mothers gladly, with a profound sense of religious devotion, threw their infants into the fiery arms of Moloch. Moloch was an idol which men had made and set over themselves. The state which is an entity above and superior to the totality of its population, which its people exist for and which does not exist for them, is an idol. It demands insatiably countless hecatombs of living men who go to their death as gladly as chosen youths went to their death as human sacrifices to the old gods of Mexico, and as vainly. Let us abjure the worship of idols. They take a heavy toll of lives. It is true that they are no longer made of wood or stone. They are gods made by false thinking. Whenever men say that life is for anything else than life, whenever they declare that it is for the state, for conquest, for national glory, for art for art's sake, for knowledge for knowledge's sake, or for any other of the abstractions which men have in vanity made into gods and to which they attribute a greater reality than that which their own lives possess, they are indulging in

idolatry, inhuman, debasing and destructive as any which the world has known. If a few of us are to be high priests of abstractions and are given power by our fellows to condemn the rest of men to give up their lives that we may worship the false gods whom we serve in whatever way we please, it were better that no more children were born. For unless life is a sacred and a holy thing, an end in itself, not in the service of anything but life, it is plain that non-existence is much to be preferred. Let us disavow the superiority of that which man creates to man its creator. Modern society does not exist to glorify states or to do the will of medievally minded kings. Children have a value to society quite apart from the fact they will grow into soldiers or will give birth to soldiers. The false philosophy of the state which has grown up in Germany with the hideous consequences which we see must be destroyed. The earth will not be a fit place for children to grow up in until it is eradicated. It is difficult to believe in the value of life in the midst of a world which values human life so little. How bitterly have we been imposed upon when we thought and talked about being civilized while men went about with this awful thing up their sleeves!

In this our land we run little risk of being deceived by a false philosophy of what the state is. We know very well that our institutions exist to serve us, not we to serve them. This does not mean that we shall not maintain them with our lives. We shall maintain them because they serve us. But we shall not assume that they are inexpressibly precious in

themselves no matter what they do, that they are God's appointed way for all men to live and that it is our sacred duty to offer every man who exists the choice between letting us regulate his life or taking up the sword. The thing that we exist for is the good life of each one of us. The child has no other reason for being than that he may have life and have it abundantly. Our problem is to guarantee it to him, to surround him with the influences which make for it and to keep away from him the agencies of destruction.

What a strangely curious thing life is! We come here without being consulted; we are here for but a little time, and all our hopes and plans, all of the little work we try to do, all our anticipations and our fond desires to make of earth a better place and to improve the condition of men live on only in our children. If we could once realize the human pathos of our lot, if we could but feel our own dependence upon the young for living for us when we shall no more be here, I think we should be more solicitous for their well being. In a passage in the "Laws" Plato tells us that a man "must cling to the eternal life of the world by leaving behind him his children's children so that they may minister to God in his place" (773 E). By ministering to God he meant that the children should go on making straight what the parent had tried to make straight, ennobling what the parent had tried to ennoble, perfecting what he had tried to perfect and glorifying what he had sought to glorify. Theirs was to be a secular ministration, for Plato did not divide his world into

things sacred and things profane. They are to carry on our work for us, to keep alive what we have undertaken.

The child is born into this world of human purposes which he must carry forward. He is everywhere about us, yet his existence is apt to escape us. Let us, if we can, image that innumerable company. The author of the "Invisible Playmate" rewords in this fashion the vision of the children which a quaint old German poet calls up under the title of the "First Day at School."

All over the world — and all under it, too, when their time comes — the children are trooping to school. The great globe swings round out of the dark into the sun; there is always morning somewhere; and forever in this shifting region of the morning-light the good Altegans sees the little ones afoot — shining companies and groups, couples and bright solitary figures; for they all seem to have a soft heavenly light upon them. He sees them in country lanes and rustic villages; on lonely moorlands, where narrow brown foot tracks thread the expanse of green waste, and occasionally a hawk hovers overhead, or a mountain-ash hangs its scarlet berries above the huge fallen stones set up by the Druids in the days of old; he sees them on the hillsides ["trails of little feet darkening the grass" he observes], in the woods, on the stepping-stones that cross the brook in the glen, along the sea cliffs and on the wet ribbed sands; he sees them in the crowded streets of smoky cities, in small rocky islands, in places far inland where the sea is known only as a strange tradition. The morning-side of the planet is alive with them; one hears pattering footsteps everywhere. And as the vast continents sweep "eastering out of the high shadow which reaches beyond the moon . . . and as new nations, with their cities and villages, their fields, woods, mountains and seashores, rise up to the morning-side, lo! fresh troops and still fresh troops, and yet again fresh troops of 'these small school-

going people of the dawn,' each smallest lad as he crosses the home-threshold that morning is a Columbus steering to a new world, to a Golden Indies that truly lies — at last — beyond the sunset. He is a little Ulysses outward bound on a long voyage, where-through help him, thou dear Heaven, past the Calypso Isles and Harpy-shores lest he perish miserably."

This school-going pageant daily follows the sun in his course.

Now turn from this image to another. A friend of mine some time ago projected a history of education which unfortunately he has not completed. That history was to be upon a new plan. It was to be made up of different volumes, each one of which would trace the story of the particular aspect of school work which it treated from the earliest recorded beginnings to the present time. One volume was to be devoted to the history of the schoolhouse, another to the history of school administration, another to the growth of courses of study, another to teachers, the last and to my mind the most fascinating was to be a history of school children in all the ages. What would I not give for such a priceless book, a volume which would enable us to see the generations as they started upon the course of life, to note the esteem in which their parents held them, to observe the care with which they nurtured them and the influences with which they surrounded them and the ideals which they formed for them. "The greatest reverence," says Juvenal, "is due to a child." If we had such a history of the children, it would indeed tell us how men regarded themselves, what visions of the future they loved to dwell on,

and what deep significance life seemed to them to hold. For in planning for the welfare of the children men most consciously project their own deepest hopes and most intimately reveal their own souls. When we deliberate about them we are attempting to shape the very structure of to-morrow, to select the samples of lives which we most want shall be, and in this conscious effort to create the kind of men and women who shall come after us and profit by our mistakes as well as our successes it is given us to make the nearest approach to the divine creativeness which frail mortals are allowed to make.

What then do we want for the children? First of all that they shall be well born — not fated by their parents to a life of physical and mental defectiveness. Idiocy, alcoholism and syphilis must not be allowed to reproduce themselves. "The device for humanity must be," says Engel, "not natural selection, but artificial selection — eugenics!" We did not require the war to show us that we are in but a beginning stage of civilization. Any one who has noted the care with which men breed animals and plants and the want of care which they show in the breeding of children, must have arrived at the conclusion that they either value the plants and animals and do not value their children or that their intelligence is so weak and feeble that they do not recognize the fact that the principles of breeding which apply to the plants and the animals apply to the children also. The eugenists must simplify their program; when they reduce it to manageable terms we shall all unite with them to put it into

effect. At present they defeat their cause and our cause too by claiming a larger knowledge than they really possess and by not devoting themselves single mindedly to the enacting of legislation which would bring about the segregation or if need be the asexualization of all individuals who belong to the classes whose children are certain to be blighted by their heredity. What is wanted first is enlightenment, but that enlightenment must lead to coercion.

Shall society revert to the ancient practice of examining all who are born and picking out those children who are not fit to live and putting them to death? "When such children for one reason or another, find their way into the world, they should be quickly and painlessly destroyed," writes Engel. Such children, he thinks, are high-grade cretins, idiots and the grossly deformed. They can never become useful members of society and to-day the refinements of medical skill preserve them to a life of martyrdom. It must be confessed that they are a serious social problem and it is not clear just how that problem should be solved. But the helpless are by no means socially useless because they are not producers and can never handle a rifle. They call for care and are opportunities for kindliness on the part of the sound and the strong. If might makes right, since they do not possess might they should go under. But fortunately this is not the working theory of most nations; those who still believe that it is the peace-makers who are blessed, not the war-makers, the merciful, not the merciless, the poor in spirit, not the arrogant, the meek and

not the proud, will have a care against breaking into the bloody house of life and understanding a law. If we wish men to value life we shall not soon take such liberties with it.

Society does not want to propagate defectives and must do all in its power to prevent their multiplication. But is a high birth rate of normal children our object? Is mere fertility of the stock a good, and increase of the population a national virtue? Here again if the end of life is the creation of a victorious army on the part of the nation to which we belong, since size of the army is one element of success in battle we must answer yes, a high birth rate is necessary in order that we may have plenty of soldiers and "realize our national aspirations." But if we are more interested that the state shall have a population of good quality rather than numbers merely, our answer must be no. An excessive number of births will mean a deterioration in the quality of the stock and our national aspirations toward a higher grade of existence, greater individual perfection, a better social order, cleaner, sweeter, happier lives and a progressive realization of justice will be thwarted. It must be apparent to every American that the ends to which we are devoted are not served by a high birth rate but rather by the quality of the life which we are able to secure for our children.

The quality of their life is in large part determined by social heredity — by the kind of homes they grow up in — by the nurture which attends them in the earliest years. Which are the most important

years in the child's welfare? The unanimous answer of all the great thinkers, Plato, Aristotle, Quintilian and those of the modern day, is that the early years are most decisive. "The beginning is the most important period in the case of a young and tender nature which readily takes the stamp which may be impressed upon it." The psychoanalysis of the Freud school would have us understand that a child who grows up in a home in which mother and father are continually quarreling can not have a normal temperament or a happy life. He is bound to suffer the penalties of emotional wear and tear. His teeth are literally on edge and his nerves in a jangle. It makes a very great difference to him throughout his entire life what kind of an atmosphere surrounded him in his infancy. One can hardly make too much of this point. Plato seems to have been quite right in insisting that the breezes of beauty and health should blow over the souls of the children, that the poets should create the image of the noble character or make no poetry among us, that the other craftsmen should put a stop to embodying the character which is ill-disposed, intemperate, illiberal and improper in their pictures, their buildings or the other products of their craftsmanship on pain of being debarred from working among us if they do not, for the young must not be nurtured upon images of badness which little by little feed them until they gather a huge evil in their souls. The graceful and the beautiful must be their surroundings, bringing them unconsciously both to likeness and to friendship with the law of beauty.

Some years ago Maurice Hewlett wrote an article which appeared in the "Nineteenth Century and After," in which he suggested that as England already had a bureau of standards where the standard inch, foot, yard, pound, gallon and bushel are kept, where reference to them may be made to correct the falseness and inaccuracy of the measures of commerce, she should also institute a bureau of social standards. Let a fine child be chosen, he said, and kept at Westminster and whenever bills are introduced in Parliament let those who propose them be required to take them to the fine child at Westminster and weigh them against him. If he falls in the scale, let the measure be rejected. If he rises, let it be approved. If we weighed social conditions in terms of the fine child, much that is proposed would have to be rejected and much that exists would have to be repaired. Yet he is the social standard. Our whole duty can be summed up in the effort to make of this world a fit place for him to live in. Take this standard into any city or into any country place and by its aid you will soon find conditions which cry aloud for remedy. There are the tenements without pure air and sunlight. He can not grow in them. There are foul unsanitary surroundings. He can not exist in them. There is unspeakable disorder, hideous ugliness, a decaying countryside, a city district which is a dump heap. What kind of breezes blow over the souls of the children from these places?

Worse, far worse than the menace of physical surroundings utterly uncared for and run down, is the disorder and despair of the persons who are his

model, who give him the only suggestions which come to him and standardize his conduct and his taste. If one allows himself to think of this world, for a moment, simply as a place for children to grow up in, his heart sinks at its blighting unfitness and the lack of vigorous effort on the part of all of us who are alive to make it fit for them. The time will come when conditions will be arranged to promote their welfare, when Plato's prophetic dream of an environment of pleasant places ordered and beautified to safeguard the souls of the young will come true. There is no gainsaying that children suffer much from their elders, from the despairing surroundings in which they are brought up, from the penury and want of hovel and garret, and from the brutish ignorance and filthiness of mind which not infrequently attend them. One may not be able to agree with Jean Jacques, that they are born good and everywhere become bad because society makes them so, but he will at least admit that they are born to take the stamp of the influences that play upon them and that these influences are not infrequently harmful.

Quintilian complains of "a blind and indolent negligence on the part of parents." It happens far too often that the parent is the natural enemy of the child. In state institutions there are groups of children whose parents have not taken pains to housebreak them at the time when that lesson should be taught. As a result they grow up almost like pariahs in conditions which no normal child should be allowed to continue to make for himself. Society,

as a whole, is not without its responsibility for the lot of the child, but parents are the specially deputed guardians of the children. Their task is a heavy one and one which they almost always are frank to confess seems to them too difficult for accomplishment. Every mother would at times send her child to the state institution if she could do it as easily as her neighbor who has taken a child for adoption sends him back when he has proven himself to be unworthy, says a friend who is herself a mother. The business of rearing a child, even of rearing the best of children, is a hard one, a responsibility which those who have it recognize themselves as unequal to cope with. Being a parent is a human job concerning which much knowledge has accumulated. There seems to be no very good reason why parents should not be trained for their task just as experts in any line are trained. This training should come after they have children rather than before, for it is only when the child puts in his appearance that one really begins to know about children. Every city should have a school for mothers in session throughout the year. It could be under the direction either of the board of education or of the board of health, since the instruction should be the same in either case and partake of the functions of both bodies. Attendance, say for one hour a week, might well be compulsory for six months after the first child is a month old.

Having provided for the instruction of the mother it is now our duty to talk about the instruction of the child. His physical well-being is of the first importance. Health and strength are things we

must be helped in our early years to get for ourselves. How many boys and girls of your generation and mine suffered untold horrors from toothache and go through life marred and maimed because their parents had no care to help them to preserve their teeth at a time when they were too young to do it themselves? In New York City recently there was a tooth brush drill in Central Park in which hundreds of public school children took part, whose sole object was to impress the need for the care of their teeth upon them. This is a good illustration of the stress which modern society is beginning to put upon these matters. How many children have been sent to an early grave after a brief life made miserable by tuberculosis simply because they were not given breathing lessons and taught to use their lungs properly? Again how many have suffered from eyestrain, from earache, from adenoids, and how many have been allowed to indulge in play or work which gave them defective hearts to suffer from as long as they lived? The health of the child determines the health of the adult to such an extent that modern society finds that it must bend its energies to constructive efforts in this direction.

Modern society feels that the education of the children is its supreme constructive activity. Its laws forbidding child labor, requiring attendance at school, training and carefully supervising teachers, setting apart funds for the erection of elaborate school buildings, providing an elementary education and after it high school or trade instruction for all, are some of the evidences of its solicitude that each

child may be guaranteed his right to instruction. This has been called the century of the child and until the declaration of war a year ago it seemed to be rightly named. It bids fair now to go down in history as the century of disaster. At any rate it is clear that nothing will prevent the destruction of civilization and the complete extinction of progress but such a world-wide rectification of human intentions as only a completer devotion to education can bring about. We are, I think, upon the eve of the greatest educational revival that the world has yet seen. It will be an education, however, which is not primarily materialistic. It will have for its prime purpose the culture of human ideals.

I have not spoken of the great system of agencies by which society seeks to redeem the socially unfit and to restore them to social fitness. It is not that I have forgotten them that I overlook them, but because I regard them all as remedial, as purely custodial for those who are defective at birth, or existing to undo the ill results which defective homes, defective schools, and a social life which is careless and indifferent to its own welfare produce. The agencies which exist to do repair work can not compare in importance with the agencies which exist to make such repair work unnecessary. It is upon the constructive forces of society that our attention must be fixed. If one could bring it to pass that the homes and the schools and public opinion itself should do their duty, there would be little need for juvenile courts, reform schools and prisons in the land.

"IS THE STRESS WHICH IS NOW BEING PUT UPON THE PRACTICAL INTERFERING WITH THE IDEALISTIC TRAINING OF OUR BOYS AND GIRLS?" [1]

A RECENT report of the United States Commissioner of Education contains the statement that

> the vocationalizing of education remains the dominant note of the year. It will probably continue to be of paramount importance for many years, since the vocational movement in its larger aspects bears such vital relation to the whole problem of widening democracy.

There can be no question that this movement is on. It has two forms, one the movement for definite vocational or trade or occupational training, the other a much larger movement to make education of all sorts definitely and specifically preparatory for the life that the student will lead by making that life the basis of his education throughout. Any one who reads the most interesting educational paper which comes to my table — the Educational Supplement of the *London Times* — will not be long in discovering that this current of educational change is running far more rapidly in England just now than it is in America. That education must be modernized by being made so practical that it will fit men

[1] An address before the Religious Education Association, Boston, February 28, 1917.

and women to cope with the everyday affairs of life is as definite a conviction over there as that England must win the war. If our nation becomes involved in the war, it will come out of it with many times more interest in practical education than it now has. In short the world seems to have entered upon an educational renaissance far more important and more widereaching than any educational revival through which it has yet passed. We live at one of those great times when old things are rapidly passing away and all things are being made new.

I am asked to consider the question whether or not this insurging of practicalizing education may not interfere with the idealistic training of the young. My answer is unqualifiedly no. On the contrary it is certain to do for us what education has by no means done in the past, it is certain to make idealism abound. In one of their conversations Goethe warns Eckermann that to attempt to realize the ideal is vain and futile, for not that but to idealize the real is our problem. Now this whole vocationalizing effort has no other purpose than to help folks to idealize the real. I used to be a teacher in a missionary school for the children of ex-slaves in the midst of the black belt in the south. Ours was a school with a strong preference for the classical type of studies; there were newer studies there, but they were not received gladly. We taught book work of the prevailing kind, great quantities of reading, writing and spelling without any particular effort to see to it that our students read what they should have read, or wrote what they should have written or spelled the

words they should have spelled. In short we taught reading for the sake of reading, writing for the sake of writing and spelling for the sake of spelling without for a moment doubting that these abstract and unrelated activities would somehow make themselves into tools and get themselves used by the poor little befuddled, deceived, and pompous graduates of our school. And after we had taught them reading and its fellow studies without teaching them how to use them we gave them copious instruction in English grammar which they could not understand, United States history which was so abstract and unrelated to anything they had seen or had any part in, that most of it was meaningless to them, and the hardihood of the few who were not utterly discouraged by this course of study we next tried to break by setting them to wrestle with the Latin grammar. Two or three who had persevered in that course as far as Cicero's orations we felt had not had enough grammar yet, so we set them to memorizing the Greek grammar. The money to provide that education was collected dollar by dollar, ten-cent piece by ten-cent piece, and almost penny by penny from hard-working, pious folks whose hearts bled for the suffering poor, and who, as they listened with rapt attention to the persuasive missionary's account of how education was being brought to an oppressed race, taxed themselves heavily, shared their living and frequently gave more than they could afford, that those poor colored children might have the unutterable blessing of an education; and we teachers used that money and took years of the time of those young people and

sent them out into the world knowing nothing, able to teach chemical definitions and formulas to others, but wholly unable to use chemistry in farming, able to classify flowers but not to grow crops, able to pass a verbal examination on a book on physics but quite unskilled in working with machines. Some of them left with ideals such as that they should be clean, should not steal, should be men and women of their word, should work hard and be honest, but these ideals did not come from what they studied. They came from association with devoted people — devoted even though they were teaching the wrong studies and teaching them in the worst of ways. We had transplanted New England education into the south. It did not fit there, and though the resources and the energy of the best teachers that the society could assemble were behind it, it was a failure, and because it gave those young people a false knowledge and false notions of their own importance as possessors of a knowledge which they did not have it was harmful to them.

A few miles away in another state a colored teacher who knew his people and their needs far better than we did, with an intuition amounting to genius, discerned a truth that we must all in time discern and created a school to teach colored men and women to work. He taught them useful trades and forms of handiwork, and as essential parts of these skilled industries he taught them how to use their ability to read, to write and spell and employ calculation. He set before them the ideal of service. Learning, he said, which does not help you to produce something

which men want, to act and live in such a way that men seeing your good works will value and honor you, is empty learning. You are to be citizens in a great free coöperative country. Your first duty is to learn to do your part and if you do that, all other things will be added unto you. That educational reformer, as everybody knows, was Booker Washington (may his name be praised). He lived to transform the education of the colored race. In place of an abstract and formal schooling he gave them a genuine training for the work they are to do. In place of an abstract and conventional morality and religion he taught them a concrete morality and religion. In place of unrelated ideas he gave them purposes and taught them to use ideas in attaining them. In place of offering them ideals from books and the aspirations of other men he taught them to develop their own ideals and to aspire themselves.

Emerson warns us to look out when God looses a thinker in this world. The work which this humble educational thinker did is bound to transform almost everything which schools and teachers do. It showed conclusively that the New England type of education must give way to a better kind of education in the south. It is now showing that the New England type of education must give way to a better kind in New England and in the whole United States. There are few happenings in the history of men more unexpected and astonishing than that the colored race within a single generation after it was freed from slavery should have taught the white race how to train up its children. A critic of education had to

grow up outside the treadmill of education in order to put the proper value upon what is being done and to point out ways of doing better. The most striking experience I have yet had in this incarnation was to meet and talk with the Buddhist monk Dharmapala and to hear from his own lips that he had come to America in order to take back to India a man sufficiently familiar with the work of Booker Washington to establish a school similar to that of Tuskegee in the ancient city of Benares. That school was started. Surely nothing more dramatic has anywhere happened than that the best and most saintly representative of the oldest of all civilizations should seek the help of the best of the last of all the races to become civilized, in the education of his people.

My own difficulty is not at all due to concern lest the young may lack an idealistic training if they are instructed in practical studies and given what is called a vocational education. My difficulty is that I can not comprehend how any other kind of education ever came to be given. How did it happen that anything but that which prepares men for their work ever came to be regarded as education? Must not all education be vocational? If we follow Aristotle's advice to study things in their origin, we get great illumination upon this problem. Paleolithic man, if he taught his child anything, must have taught him to do the things which he had found indispensable, to chip stone implements and to hunt with their aid. Whatever education there was in that early time was clearly vocational. And vocational it remained at Sparta, and at Athens too, for

reading and music and gymnastics were the means to that democratic citizenship which the ability to read Solon's laws, to understand the Homeric morality and to defend the state against the Persians made possible. When the Sophists introduced higher education into Greece they came offering to teach the art of life or how to succeed in public and private affairs. One of them, Gorgias, believed and taught that but one thing was needful. The person who wanted to be a physician he urged to learn how to make speeches rather than to study medicine, and the man who wanted to become a general he said should study speech-making rather than military tactics. But Socrates corrected that error and spent his life in telling the Athenians that they must learn civic and manly virtue in just the same way that they learned to make shoes or pilot ships. Plato in a famous passage [Laws 643–4] tells us what his notion of education was.

No better statement of what education is has ever been made than his. It is learning beforehand the knowledge which one will require for his art. The teachers should direct the children's inclinations and interests to their final aim in life, and of all these aims that of being a good citizen and a good man is the greatest. That, too, according to Plato, is an art in which one is to gain skill in distinguishing good from evil, true from false, noble from ignoble by what he does, just as the carpenter learns his trade or the farmer his. Cleanthes tells us that Socrates "cursed as impious him who first separated the just from the useful." That knowledge is virtue was the

one doctrine that he taught. To him all knowledge was practical, and as I read him all knowledge was practical to Plato also. It was Aristotle who introduced confusion, first, by distinguishing a liberal education from an education fit for slaves, a distinction which the world mistakenly tries to maintain after slavery has gone out of existence, and, secondly, by separating theoretical knowledge from practical knowledge — theoretical knowledge, as he put it, being knowing just for the sake of knowing, knowing wholly unmixed with volition, and practical knowledge knowing for the sake of doing. Is there any such thing as knowing unmixed with volition? At any rate the lecture notes of Aristotle's instruction show us that he gave great attention to practical knowledge. Roman education was practical throughout, and education in the dark ages and the lesser renaissance, and the greater renaissance was throughout a specific preparation for what those who studied intended to do. Reformation education was intensely practical, specifically preparatory for the chief work of man. When the learning of the past had been translated into everyday speech it seemed to a good many thinkers of that day that the study of Greek and Latin should be given up and that the real things about men should be studied instead of the languages. The realists had the best of the argument, until about 1750 certain German teachers of the old subjects began to defend their retention in the schools by declaring that though Latin and Greek are no longer practical, since what we study in them is no longer useful, they must be

pursued because they develop the powers or faculties of the mind. Thus the doctrine of formal or general education came into being and for a long time wholly supplanted specific education, which was the only kind of education which had existed for two thousand years.

The man who objects to the onrushing present-day movement to make education specific throughout and definitely preparatory to the work of life does so for one, or perhaps more than one, of three reasons. He either follows Aristotle as against Socrates and Plato and declares that knowledge exists for the sake of knowledge, science for the sake of science and learning for the sake of learning, or he holds to the doctrine of formal discipline and believes that there are some studies which improve the mind and perfect its powers and which are therefore indispensable while we are getting an education, though we can not after we leave school use them. Or he fears that making education definitely practical will result in such a narrowing of the course of study which each student pursues that nothing but one-sided training will result and therefore prefers the old confused, aimless and unjustifiable education solely because he believes it requires the student to study more different subjects than the proposed arrangement will require. There is a fourth reason which some men give for their preference for the old studies. It is that they give the student hard work and lots of it, but this justification of them overlooks the fact that the new studies provide plenty of work too, and have the advantage of permitting the student to understand why he does it.

The person who objects to practical studies because he believes in knowledge for its own sake is an intellectualist and must reckon with the pragmatists. His philosophy of learning seems to be unsound. There is no warrant in psychology or in history for such a position, and the phrases he uses seem to have no meaning. Literature, science, philosophy are all things which man has created. It is idolatry for the creator to worship the things which he has made. They are all tools or instruments which the young must learn to use and work with, but not ends in themselves. It is as sensible to say that hammers exist for the sake of hammers as to say that literature exists for the sake of literature, mathematics for the sake of mathematics and science for the sake of science. They all exist for man's sake and for no other reason. There is a very great advantage in giving up spelling for the sake of spelling, geography for the sake of geography and literature for the sake of literature. Just as soon as we take the view that we learn to spell in order that we may spell the words which we shall need to spell when we write, our task becomes so definite and manageable that we can accomplish it, while so long as we learn to spell words just because words are spelled, there are so many of them which are spelled that we do not learn to spell them with any degree of success. The same limiting and defining of our task takes place in all the other subjects.

The man who believes that the business of education is to perfect or at least improve the faculties of the mind will have to reckon with the psycholo-

gists, who declare with one accord that there are no faculties of the mind. He will have to make his peace with such men as Professor Spearman, who declares that "the great assumption upon which education has rested for so many centuries is now at last rendered amenable to experimental corroboration — and it proves to be false!" The more he studies this intricate subject the more convinced he will become that a philosophy of education can not be made out of the doctrine of formal discipline, that all education is definitely and thoroughly specific. We can not longer take the years of children in order to train them in accordance with a theory which has been proved to be unsound. All life is a doing and all real education is learning to do certain things which neither the student nor his fellows can get along without.

If any person thinks that specific or practical education can not be of as many kinds as are necessary to prepare the student to do all the several sorts of acts which he as a moral person, good citizen, member of a family, social and industrial producer, and trustful child of God must do he must have reckoned but indifferently with the dictum of the psychologist that "it is impossible to keep up an interest unless it be specific," and that the specific interests which unite us to our fellows may each and all of them be fostered and trained in the school. The fact which we must reckon with is that general education of the faculty-developing sort does not foster but depresses them. One of my colleagues, whose interest in the mental life of students is exceptionally acute, tells me that he is convinced

that our present requirement that certain studies must be pursued for reasons which the student can not comprehend (nor can we ourselves, for that matter), and which the student spends his years upon in an aimless fashion, leaves him mentally disorganized and ambitionless at the end of his course. His idealism is gone, he distrusts his own powers and he faces the world in a dejected and despairing condition. The school and college, instead of fitting him to take part in the battle of life, have unfitted him to do that. The conclusion is clear: studies must take the life form. Knowledge for the sake of knowledge, which is an empty claim, must be given up. Education must be vocationalized throughout and students must be given opportunity to acquire the knowledge which they will require for their art. That art is broad but not vague. If it prepares them for it all education becomes real and vocational, for the life of the religious person, of the citizen in a democracy, of the member of a family and a social economic producer is the life unto which they are called.

I have a quarrel with the folks who are trying to give the good old word vocation the exclusive connotation of a money-earning occupation. One is called to many more things than to produce goods for sale. His education at all stages must, I think, be broader than a mere effort to acquire saleable skill, though at certain stages the development of saleable skill in a particular trade or occupation should be the chief element in his course, but not even then the only element.

We may take it for granted that the man who has not learned to do anything has not found and is not finding his place in society. He is not able to give himself a value in the social equation. His spirit must be that of the non-contributing member, of the outsider, the wanderer, the vagabond. You can not make a society out of such men, neither can you socialize them. To teach the young that each one of them has a place and a work to do and that his main business in youth is to find out what that work is and to fit himself most diligently to do it seems to me to be the whole purpose of education. Unless every part of it is going to make a difference in our after lives we had better omit it. The food-producing or life-maintaining occupation is the core of our activity; it is only a part of our activity — but it is and should be the organizing part. An education built upon the vocational motive broadly enough construed to enable the young person to acquire the elements of his entire work in life would, I think, be far more truly cultural than the formal education to which we misapply that adjective.

And I am going to claim for it that it will develop a more genuine sense of religion too. After all, it is working with the resisting material of life that brings us face to face with the great fact of God's existence and of the human law of justice and the great need for faith and loving-kindness. Religion is just choosing the kind of a universe that we are forced to insist that this must be. Books may help us to decide what kind of a universe we must think this is, but the lives that we live tell us far more about that than

even the best of books do. The man whose life is one untroubled joy may read his Bible, but its words must seem like an ancient tale to him. If his will throughout has its own way, he will not come to a realizing sense that he is a child of higher powers. He will worship himself and be his own disciple. Phrase it as we will it is chiefly this self-worship that keeps men away from God. Whenever they are caught up in the struggle of mighty forces which will not obey them, but which they must take note of and obey, they become humbled and dependent. It is adversity rather than prosperity that purges the mind. In times of great public calamity alone do men see the glory of the coming of the Lord, for then only do they become genuinely other-minded, feeling their own helplessness and their complete dependence upon a power which is not themselves. Why do we all choose justice then rather than life and the way of sacrifice rather than peace without effort? Because we feel it is the will of God.

Now the education which introduces us early to the realities with which men have struggled ever since the world began is far more certain than the education which comes from books to make us aware of ourselves and the forces with which we must reckon. He who reads a book about agriculture will learn something about the recurring seasons and may gather from it that they are a beneficent arrangement to enable men to live, but he who tills a field will know the recurring seasons as a fact which he must reckon with or starve. He who studies physics for the culture of his mind will

learn something about the law of gravitation, but he who builds a wall or constructs a house will have a realizing sense of it. It is what we do that teaches us. It is easy to get on with one's fellows in the school, but in the shop team work and the ignominy of shirking are realities. Our little undertakings, if they be real, teach us the importance of the virtues. Our great undertakings in which we stand together facing defeat and death teach us perhaps for the first time in our lives that all that we can do is of but slight avail, that unless right is on our side and God fight for us our struggle is in vain. It is purpose, laying hold of life in race-old human ways, rather than indifferent and aimless seeings and hearings, that we must depend upon to make men really conscious of the facts and significance of religion and morals. For a purposeful wrestling with conditions has a sobering poignancy about it as superior to a mere verbal taking account of them as first-hand evidence is superior to hearsay evidence. It is in sweeping rooms, in herding sheep, in plowing fields, in driving engines, in tending machines, in fighting battles, that one must learn to be a child of God, or his religion will be as little a workaday affair as his Sunday clothes are.

WHY WE GET ON SO SLOWLY

It was in a large city. We came by invitation of our host, who all his life has been singularly devoted to making this world a better place for folks to live in. His fellow stockholders have elected him to the directorate of one of the largest corporations in which he owns stock. I mean the public schools; he is an active not merely a voting director. My friend, the director of studies, and I were the first to arrive. "Tell us what it is all about," we said, as soon as we had exchanged greetings. "It came to pass in this way," he said. "My friend G—— was, as you know, president of the board of education for some years. Three years ago he retired from that body. I used to tell him that our most important duty was to make over the course of study. But we were so busy about vocational schools and parents' complaints and other small matters that we never got to that, though I have long believed that since it is the program of work which both teachers and students are required to follow and the rope which ties the feet of every one of us, it is the thing of things to look out for and keep in order. G—— never saw it that way when he was president of the board; but now he has a daughter in one of the schools, and what she is forced to do there is more than he can bear. The number of roods in an acre and of fur-

longs in a mile seems to have been the straw which broke his self-control. He says it is stuff, and no child should be required to learn it. He came to me a week ago and asked me to bring together a half dozen men to do something about it. That's why you're here. He is bringing a business man, Mr. Z——, with him, and I have asked two members of the state board of education and the superintendent of schools to come in."

In a little while the company gathered, and our host turned to the ex-president of the board of education and asked him to tell us how it looked "to a former school officer who had been converted from his official indifference by being a parent with his own child in school." He spoke with marked seriousness. "The great problem of life," he said, "is not death; the great problem is children. Nature sees to it that at the last we die peacefully, but as long as we live our children are a source of unceasing anxiety to us. First the baby is not strong, and we go about with the horrible feeling in the back of our minds that in spite of all we can do, he may die. When he is safely over that, we begin to wonder what sort of stuff is in him, and set out to teach him to be clean and mannerly, to show spunk by not crying, and not to pull the house down, or set fire to it, or run in front of automobiles. If he goes to a neighbor's to play with her children and brings something back which does not belong to him, we inquire how he got it. He says it was given to him. Like all mortals his desire to accumulate is very strong, and we wonder if what he says is

so. We take him by the hand and lead him into the neighbor's presence. Alas, there is no future for us if he goes on in this way. Our beloved child whom we have cared for so tenderly is a thief! Horrid word! Our confidence is gone. The honor and good name which we have striven to build up all these years are now threatened. Why does he insist on taking so lightly that which is the very object of our existence? We forget for the moment that he is not set up to distinguish mine and thine when he comes here. They are not ideas that he is born with. Like every one who ever lived, he must learn to think them for himself. We reason with him, we talk about the important things to him. Alas, the same is true of everything. Why does he sound words so imperfectly? Why does he make such queer errors in speaking? He begins to count, and I give him little sums to add or to subtract. Two and six, I say. Four he answers. Two from six; eight he instantly replies. Why does he have such strange notions of things? If there were but some way of saying magic words over him, or if he might sink into a Rip Van Winkle sleep and waken from it a man, I should be satisfied, if he were only the kind of a man I want him to be.

"We look forward eagerly to the child's going to school. Then, we say, the major part of our troubles will be over. He shall have the expert care of wise and loving teachers. They will set his feet in the way he should go. In them we shall have coadjutors of the spirit who will supply wisdom for our lack of it and will mightily supplement our fumbling efforts

by the sureness of their intelligence. His first days in the kindergarten are a heavenly delight. The things he brings home which he himself has made are positively wonderful. His joy in his school knows no bounds. When he goes to the first grade, almost the same thing is true. I do not know just where the trouble begins, but somewhere in the second or third grade unmistakable shadows of the evening begin to steal over his spirit. He no longer runs to school with his former alacrity, he is not the same buoyant self when he comes home at night, he no longer speaks of his teacher with his old-time enthusiasm, and he frequently complains, 'I can not get my lessons, I don't know what this old arithmetic is about.' My little girl is farther on than that. She is required to learn how many roods make an acre, and how many cubic inches a gallon. She is worrying over bank discount, longitude and time, compound proportion, aliquot parts, and cube root. The problems she brings home make her parents shiver. They are like this: Divide $639\frac{7}{12}$ by $\frac{31}{32}$. If the principal is $567, the time 11 months and 13 days, and the amount $763, what is the rate? What is the cube root of 1,797,643? Find $14\frac{2}{7}$ % of 25 acres.

"These are, to be sure, extreme instances. But what has she to do with extreme instances? There is another thing that I object to. When she studied addition, the sums she was required to add were composed of numbers of six and seven figures more often than not. You would have concluded from the size of the computations which she practiced

upon that her teachers were confident she would become a millionaire and henceforth have nothing to do with calculations that involved less than a hundred thousand dollars. Yet I find that she cannot multiply 8 by 7, nor subtract 9 from 13, nor divide 64 by 9. Ordinary everyday work she simply does not have a chance to do, and such problems as meet one in the street, in the shop, and the home are neglected in order that puzzles may be solved and absurdly grandiose computations made."

"You are repeating an ancient objection," said the superintendent.

"But I have not done yet," said the ex-president of the board of education, who had been promoted to the rôle of a parent, "indeed I have hardly begun. Offense against common sense in arithmetic is nothing to what it is in grammar. I lie awake at night and weep over what my daughter is required to study in that subject. It is the most metaphysical and uncertain of all the creations of the human intellect. The world reached its highest known stage of intelligence before grammar was even invented, much less studied. I have had some curiosity to find out where and how so great a blight upon young life first came into being and why it ever became a school study, and I find that the Greeks knew it not, that their triumphant literature and their matchless oratory came to flower before grammar was dreamed of. That it was not in any sense one of the great arts which they wrought out and with which they armed the human race. That after Greece had declined, a barbarous Macedonian made himself the

owner of all Egypt, and in order to surround himself with the most spectacular form of ostentation of which his vain mind could conceive, he set to collecting not only all the rare and precious objects and books and manuscripts there were in the world, but he capped it all by making a collection of the living men of the world who had any reputation anywhere for knowing and thinking; taking them from their homes where they had some relation to the daily necessities of human beings, and had really been of some use, he shut them up for life in one of his palaces at Alexandria, which the folks there were in the habit of calling 'the hencoop of the muses'; and out of sheer desperation, since they could do nothing better to amuse themselves, they counted the words in the books which real men had written, and prepared tables of the forms and endings which the users of words employed. The lifeless dregs of books which their distilling left we now call grammar, and study instead of books and even speech itself. In their lowest depth of indifference to the moving, pulsing life of man not even the Alexandrians sank so low as that.

"Pardon my vehemence, but it is wicked when our children ask us for bread to give them this stone. To make them study grammar seems to me like feeding them on the wrapping-paper in which our food is brought from the grocery. Is our language merely a thing to be known about or a thing to be known? I would be foolish to try to learn to play golf by committing a book about it. You say our children should speak correctly. Are we trying to make them into precisians? Without giving them

rich opportunities to make mistakes and teaching them that utterance and being understood are the great things, are we going to make them into worshipers of words, who, having been told that they are stern things, are henceforth so afraid of them that they wrap their thoughts in a napkin of fearsomeness and refrain from uttering them?

"But this is not the worst of it. They study definitions which are not in the slightest degree comprehensible to them. I am a lawyer, as you know, and have spent my life in learning to make subtle distinctions, but the distinctions of the English grammar which my child is required to learn to make in her lessons are beyond my power. I have asked her to find out from her teacher if she understands what they are in certain cases, and I find that the teacher is no better off with them than we. But the chief objection that I have to it is that the most that one learns when he studies English grammar is not true."

"Yes," said our host, "I know what you mean. I was three years in the law school, and I spent two of them in learning what a contract is, namely, what is an offer and what is an acceptance. That is a simple distinction compared to the metaphysical problems with which children in the elementary schools are expected to wrestle successfully when they study English grammar."

"If you want," said I, "an instance of the essential difficulty of grammar, take nouns. We are taught that nouns are names, but that does not help much, for every word, every part of speech, is a name."

"I was taught," said Mr. X——, "that a noun is the name of an object."

"It is not that," said I.

"Truth, for example," said the superintendent.

"Truth," said I, "is not an object, it is a class or kind. Is it a quality or aspect of things or a quality or aspect of our relation to things?"

"I think," said our host, "that we should hear from Mr. R—— what is being done at present to determine how successfully the children are working in the schools, and to improve their work."

"We have been giving a series of standard tests for some years now to the children in our schools," said R——. "First, we tested their skill in adding, subtracting, multiplying, and dividing numbers, and by repeating these tests, not only has their skill improved, but we have been able to determine about how many sums of a given degree of difficulty children can add to advantage in say eight minutes. Thus we have tried to find the proper limit of speed which is compatible with accuracy. If they attempt to do more in that time, accuracy is sacrificed to speed; if less, both speed and accuracy seem to fall off. In this way we are trying to determine what we may reasonably expect to accomplish and what therefore should be required in our course of study in the four fundamental operations of arithmetic. We shall next attempt to make the same sort of tests in regard to the teaching of fractions and interest and the other applications of these four fundamental operations.

"We have made similar studies to provide lists

of words which the children should learn to spell. Professor Jones in a western university, some time ago, with the coöperation of teachers in all parts of the United States, procured 10,000 compositions written by school children on subjects of their own choosing, and carefully tabulated the words which they used in them. He found that they had employed some 2100 different words in all, and he believes that this total of words may be taken as representing the aggregate writing vocabulary of the American elementary-school child. Of course, it is not the vocabulary of any one child, and different children have difficulty in spelling different words in it. This list was sent out to the schools, and a series of trials was made to find out which of these words our children could spell and which they could not, and therefore needed to study. The results were carefully tabulated and lists were formed and reduced to lessons which were printed on detached sheets at the expense of the school department, which lists are now being used as our textbook in spelling."

"Would it not be better for us to try to find out what words folks have occasion to write when they leave school?" was the question of one of the company.

"We have now begun to try to find out, in the same way, what our lessons in geography should be. In conjunction with experts in that subject, we prepared a list of ten typical questions on the geography of the United States and seven on the geography of Europe. This list of questions was given

as an examination to advanced classes in several representative elementary schools, the total number of elementary-school pupils who attempted to answer the questions being 594. It was also given to 165 third-year high-school pupils and to a class of first-year students in the normal school. One question required the students to locate New York and San Francisco upon an outline map of the United States which was printed upon the paper. Another question was: Why are the flood plains in the central part of the United States well adapted to agriculture? In marking the answers the greatest leniency was shown; for example, if New York City was located anywhere within the limits of New York State, the answer was given full credit. But by most of the pupils it was not so located; it was put anywhere along the coast or in the interior, the fact that it is a seaport being quite forgotten by many of them. No one answered the second question correctly, though flood plain is a term which is fully explained and is treated at considerable length in the geography which they have been studying. Eight and seven-tenths per cent of the 594 elementary-school pupils passed the test on the geography of the United States; four and eight-tenths per cent of the high-school students, and one out of the whole number of 86 normal-school students passed it. No one passed in the geography of Europe."

"How many facts does a student of geography find recounted in his lessons in that subject for a single year, do you suppose?" asked the superintendent. "Would you say as many as ten thousand?"

"I should say fully as many as that," replied Mr. R——. "Our effort is to simplify and organize the lessons we require the children to learn. They are completely confused by the great mass of material which we are in the habit of putting before them. They do not know what they are expected to do, nor why they should give attention to this rather than to that. Neither do we seem to. The result is awful. We must find the irreducible minimum which a school child should attempt to work within each of these different subjects, and we must fix our attention upon that. There is no other way to bring order out of this chaos."

It was the superintendent's turn to speak next. "A teacher," he said, "has recently come to us from one of the countries to the south of the Rio Grande, and she has been preparing to take our examination for a license in the subject of arithmetic. She says, 'You employ so many queer terms and such strange tables in your arithmetic that I am in doubt whether I shall be able to master it. In the other parts of America we use the metric system, and it is as easy to learn to compute by it as it is to learn to spell.' Then I saw quite clearly with what an unjust burden of nearly insuperable difficulty, through our crude method of pronouncing English words as they are not spelled and spelling them as they are not pronounced, we handicap every English-speaking child. Much the same is true of arithmetic. Is there any real reason for our clinging so tenaciously to an antiquated and illogical system of weights and measures when nearly every other nation has

adopted a simpler one? We are creatures of habit, and visit our sins upon our children.

"You have been saying bitter things about grammar, but you have not said half enough. It begins with a definition which runs something like this: 'Grammar is the science which treats of the principles of language, and the art of using them.' I frequently go into schoolrooms and find the children studying it. I ask them to tell me what grammar is and they repeat the definition which they have memorized. Then I say, 'Since you have been studying the principles of language for some time, will any of you tell me one principle which you have learned?' I have never yet succeeded in getting one. Then I turn to the teacher and ask, 'What principles of language have you been studying with them?' The teacher is no more able to answer than are the pupils. I ask them what grammar tells them about, and they reply, 'About the parts of speech and the kinds of sentences.' I ask then, 'What are the parts of speech?' They name them beginning with the noun. Then I ask them what part of speech I am. They answer you are a noun, and some say, 'No, a pronoun.' I strike the desk with my hand and ask what part of speech that is. 'A verb,' they say. Sometimes I get correct answers from eighth-grade children, but rarely from children below that grade. The distinctions which we seek to have them make are beyond their comprehension at that early age. There is little profit in trying to force children to make them. We teach them a kind of rigmarole which they learn and go through with

some success when they parse a word or diagram a sentence; but as for principles of speech, they might just as well be playing checkers.

"This same honoring of definitions above things goes on in geography. Of course, it goes on elsewhere too, indeed it goes on in every study. Did you ever stop to think what a fiendish enemy of the human race words have been ever since men began to use them? First, the savage was unable to distinguish the name of the thing from its essence, and made the man-destroying mistake of assuming that he could control things and make them do what he wanted them to do if he called upon their names. There you have the whole story of magic rites, incantations, and talismans in a nutshell. But think how it all lay like an ocean, through which men could not make their way, across the path of human progress. At last in one little corner of earth, in Attica, men got themselves free from magic words and set about the task of trying to find out what they must do to live as they wanted to live. They invented sciences which to them were nothing but carefully worked out investigations as to what men should do and what views they should hold about highly important human matters. Then come the idol-makers again, and personify and hypostatize these tools which man has made to help him in his work; and being unable to look away once more from what are now magic names to the thoughts of which they are the names, they go the savage, not one, but a whole dozen better by creating a priesthood not to manipulate things by means of words, but in

ever singing choirs to celebrate the praises of words, and to teach the young of every country meaningless catechisms of words, to words, and for words.

"Have you ever heard the statement that 'education is linguistic'? Well, it is, and more's the pity. Would that the Greeks might come again and free it once more from that curse. There is not a single corner of the vast undertaking where words and phrases are not cultivated to the detriment of thought. I went into a schoolroom where children were engaged in writing the sentence 'An island is a body of land entirely surrounded by water' over and over again a great many times in their notebooks. Their writing was good too. The teacher asked me what I thought of it, and I said it was good; but 'I don't like your sentence,' I said. 'The trouble with it is that it is not true. An island may be of stone or of lava or of coral; it is not always of land, and it need not be surrounded by water, it may be surrounded by oil or by ice or by molten lava. What you say of an island does not distinguish it from a continent!' Those children were repeating words, not studying geography. So convinced am I of this that I do not allow the facts of geography to be studied in the same year with the definitions. Let the facts come first and the definitions wait. If we know the facts in this instance and that and the other, we shall in time of course forget most of the instances, but we shall have built up a core of understanding of that which is common to each kind among them, which will remain. If we start with instances, we shall build up our knowledge; but if we start

with verbiage, we shall never, at least in most cases, get beyond verbiage, and verbiage is soul-destroying.

"I believe that the time to study English grammar is when a person begins another language that has a grammar. Then he is constantly required to look back to his own language, and ask how it handles this same matter. Grammar is possible as a comparative study; it is meaningless until then."

"Do you not think it is a great advantage then for students to study Latin?" some one asked.

"I do not know," he said. "I was in a high-school classroom a little time ago where the class was engaged in translating Cæsar. 'At the setting of the sun,' one young lady was saying, 'at the setting of the sun, many wounds having been given and received, Cæsar withdrew from battle.' 'I have never heard young women in conversation say "at the setting of the sun,"' I remarked. 'How do we say that?' 'We say "at sunset,"' one young woman suggested. '"Many wounds having been given and received." How do we express that?' No one volunteered to offer a phrase, so I proposed 'after a severe skirmish' or 'after a bloody engagement.' 'Now how does it read?' But the teacher objected that the college examiners would never accept such a rendering in a college entrance examination paper, and the school must prepare its students to enter college. 'Suppose you write to them and ask them if they would not,' I suggested. She did so, and some weeks afterward I was notified that the college authorities preferred a literal translation.

Translation English is very different from the mother tongue.

"I have never been quite able to understand why the study of Latin is good mental training," said our host. "But I believe that it is because it seems to bring that result. The only reason why it does so that I can think of, apart from the fact that it sticks out a very distant point in the world and thereby gives a very wide base for the imagination to work upon, is that the mental process which it requires is the same as that required in every practical undertaking Making out a Latin sentence requires the student to hold in mind a dozen different problems, each with several possible solutions, and then to find one hypothesis which will satisfy them all. This is true of the beginners in Latin for whom each word may mean one of two, three, or a half-dozen different things. Compared with that the process which is a straightaway matter of learning is so much more simple that it is not in the same class at all."

"That is my view of it also," said Mr. X——. "We must not forget that the main business of education is to help pupils to acquire the art of thinking well about everything. There are some studies that do that. Latin is one of them. Greek is another. Mathematics is another. Young people must be trained to exactness. These studies are mighty good for that. Cæsar was always a great delight to me. I recall his account of the construction of the bridge with pleasure to this day, though it was many years ago that I read it. I think

we must not let ourselves become too narrowly utilitarian."

"Shall I sick you on them?" said the superintendent to me, for he knew that the doctrine of formal discipline was my pet abhorrence.

"No," I said, "what is the use? Mr. X—— and our host here cannot be converted from the error of their ways. They are now going back on all they said earlier in the evening, but what of that? They can not let a little matter like the right kind of education for all the children of this city, this state, and our country shake their confidence in the finality of the educational theory which supports the teaching of Latin. Studies are good, they think, not because we use them, but because they have magic powers."

"Did you ever stop," said the superintendent, "to think that the folks who tell us that by studying one thing we learn another ought to prove their case? The burden of proof is on them since they make the assertion. Yet their claim never has been proved. Many of the best thinkers of the world have opposed it as Plato did when he said, 'I have hardly ever known a mathematician who could reason'; as Quintilian did when he refused to accept the view that geometry is valuable to us while we study it but not in after life; and as John Locke did when he said that he wished those who claimed that the memory could be improved spoke with as much authority of reason as they did with forwardness of assurance. It is said that all wars are wars about doctrine. It is certain that all education is the outgrowth of doctrine. The doctrine which is behind

much of that which we do in elementary schools, high schools, and colleges is not sound doctrine.

"I said a moment ago that those who maintain that if we want to do one thing we must train ourselves to do another, have not proved their case. That is not because of an oversight on their part but because they cannot prove it. It has already been disproved. They say that they train the faculties of the mind. They do nothing of the sort, for psychologists have taught for a hundred years that the mind is not made up of faculties. We have memories, not memory; imaginings, not imagination; observings, not observation; reasonings, not the reason; and ten thousand acts of will, not a single faculty which men used to call the will. Why then do educators try to do what psychologists tell them cannot be done? In spite of all the psychologists tell them, they still believe that in some way they can train the memory, the imagination, the observation, the thinking power, and the will as a whole. They can not. 'The great assumption upon which education has rested for so many centuries,' as Professor Spearman says, 'is now at last rendered amenable to experimental corroboration — and it proves to be false!' The ancient idol has been demolished by painstaking research. The doctrine of formal discipline must go the way of outworn superstitions. We must set ourselves to the task of working out a new program of studies which shall train our students to think the thoughts and do the things which folks who live as we want to live must think and do."

"Why call it a new program," I said, "or think that you have made a discovery in education? I think that the notion that education is just learning to do the things that one will have to keep on doing as long as he lives is the oldest notion, as well as the truest, which men have held about it."

THE DOCTRINE OF GENERAL DISCIPLINE[1]

It has been said that "the problem of mental discipline, of determining under what conditions, by what methods, and to what extent training received in a given line of mental activity spreads to other lines of mental activity is acknowledged to be the central problem of educational psychology."[2] It is more than that, it is the central problem of educational philosophy as well, and the attitude which we who teach take upon this problem determines as nothing else does what we put into courses of study and how we teach that which we attempt to teach. Until we can get our bearings on this subject we simply can not get our educational bearings at all.

The doctrine of formal or general education is a heritage from the past; it is a theory concerning the value of studies which has a history, but not by any means so long or so compelling a history as we are sometimes told that it has. When palæolithic man invented stone implements, he doubtless taught his children how to make and use them; when his descendants invented the bow and arrow, they taught their children how to shoot with them. Whatever

[1] An address before the New England Association of Colleges and Secondary Schools Nov. 11, 1916.

[2] Whipple in the preface to Rugg's The Experimental Determination of Mental Discipline in School Studies.

training they gave was specific, and all education was frankly and clearly specific until the Sophists came and taught that if one wanted to be a physician he should study rhetoric, or if he wanted to be a general he should learn to make speeches. They brought in confusion; but Socrates cleared it up by perpetually insisting that one must learn "human and public virtue" or excellence, in the same way that he learned to build houses or make shoes. This, too, was the view of Plato, throughout whose works insistence that education is specific is as marked as it was in the discussions of Socrates. But in the Republic Plato uses a sentence or two about the study of arithmetic and geometry stirring the mind to greater keenness, which led some men who read his dialogues to say that when we study arithmetic and geometry, we do not merely learn to think arithmetically or geometrically, but we improve our minds throughout. Plato takes pains to show that that is not his meaning, for in the same connection he says that students must go on from mathematics to dialectic, for "I have hardly ever known a mathematician who could reason." [1] There is no evidence whatever that Aristotle believed in anything but specific education. The next mention we have of the doctrine is in Quintilian, where it is stated only to be dismissed. This is the passage: "As to Geometry, people admit that some attention to it is of advantage in tender years, for they allow that the thinking powers are excited and the intellect sharpened by it and that a quickness of perception is thence produced; but they fancy that it is not like

[1] Republic 531.

other sciences, profitable after it has been acquired, but only whilst it is being studied." [1] Then Quintilian goes on to point out that it is to be studied for certain specific kinds of profit after it has been acquired.

As nearly as I can discover, everything which was taught during the dark ages, the lesser renaissance, the greater renaissance and the period of the German reformation was taught and studied under the conviction that it was specifically useful. The contrary doctrine that studies are to be pursued, not for their specific values but because they improve the mind, has sometimes been wished upon John Locke. And there are some passages in his writings which seem to justify that interpretation, but there is one passage in which he clearly and definitely repudiates it. "I hear it said that children should be employed in getting things by heart to exercise and improve their memories. I could wish this were said with as much authority of reason as with forwardness of assurance and that this practice were established upon good observation more than old custom. For it is evident that strength of memory is owing to a happy constitution and not to any habitual improvement got by exercise." [2]

Some years ago at Yale University one of my students, Dr. S. L. Eby, took for the subject of his doctor's thesis a study of educational practice in Germany in the 18th century. That thesis has not been published, but is on file in the Yale library. In it he shows quite conclusively that in Germany about the middle of the 18th century the teachers of the

[1] Institutes Bk. 1–34. [2] Thoughts on Education, 176.

classics began first in one place then in another, and finally pretty generally, to defend their teaching of Latin and Greek against the attacks which the realists were making upon them by saying that the study of the classics does more than give a knowledge of the classics, that they discipline, improve and perfect the mental faculties of the students who pursue them. Thus twenty-three hundred years after Plato made his chance remark about the study of arithmetic and geometry making the mind of the student keener, which he took pains to explain does not mean that a mathematician can think, this view of the function of studies which was not anywhere accepted by teachers or students until the earlier reasons for studying the classics had lost their force, became the operative philosophy of education throughout the west. The beginnings of faculty education synchronize with the development of faculty psychology. As long as psychologists taught that the truest view of the mind was that it was made up of faculties, the observation, the imagination, the memory, the reason, the emotions, and the will, it was inevitable that schoolmasters should devote themselves to developing and perfecting these faculties. But the faculty psychology was destroyed by the critical studies of Herbart nearly 100 years ago, yet perhaps as many as 80 per cent of the teachers of to-day and very nearly 100 per cent of present day parents still hold to the theory of faculty training as firmly as though the faculty psychology had not been abandoned.

There seem to have been critics of this educational doctrine ever since it was first introduced, but they

were not able to make any headway against its onrushing for one hundred and fifty years. In the latter part of the 19th century the opposition to it became so powerful that the cruder claim of educators to train the memory, the observation, the imagination, the reason and the will as faculties has now been abandoned in their writings.

Cardinal Newman challenged the doctrine when he wrote of having known men "who could without effort run through the succession of days on which Easter fell for years back; or could say where they were or what they were doing on a given day in a given year; or could recollect the Christian names of friends and strangers; or could enumerate in exact order the names of all the shops from Hyde Park Corner to the Bank; or had so mastered the University Calendar as to be able to bear an examination in the academical history of any M.A. taken at random, and I believe in most of these cases the talent, in its exceptional character, did not extend beyond several classes of subjects. There are a hundred memories as there are a hundred virtues."

There are numerous pathological cases in which the patient has lost the memory of things heard, because of a lesion affecting the brain center which controls hearing, but has not lost the memory of things seen or touched or tasted or smelled, and other cases in which he has lost the memory of things seen but not the memory of things heard, etc. In 1890 Professor James undertook by experiment to determine the influence of training in memorizing one kind of verse upon efficiency in memorizing other

kinds of verse. He first committed 158 lines of Victor Hugo's "Satyr." It took some part of eight days and a total time of 131⅝ minutes. He then trained his memory by working twenty minutes a day in committing "Paradise Lost" and finally committed the first book. After this training he went back to Victor Hugo's "Satyr" and found that to commit 158 additional lines, the same number as before, took 20 minutes longer than before the training. Four of his students repeated the test. Two of them showed considerable gain after practice, two none at all. Professor James stated it as his conviction that the native retentiveness which we bring with us at birth can not be changed.

Since that first laboratory study a whole literature of experiments on the doctrine of formal discipline has come into being. Prior to 1900 three experimental studies were published, but in Rugg's recent book[1] the results of some thirty experimental investigations are reviewed and tabulated, thus showing that the experimental study of this problem is of quite recent date.

Before we take up the consideration of these experiments let us ask what they were undertaken to prove. They were not undertaken to find out whether or not the memory, the observation, the imagination, the reason, the emotions and the will can be trained as faculties or powers in a wholesale fashion, for nothing more was needed to show that these "powers of the mind" can not be trained as

[1] The Experimental Determination of Mental Discipline in School Studies, Warwick and York, Baltimore.

powers than to call attention to the fact that no such powers exist.

In some respects it would have been fortunate for education if the whole matter had been left there, for if attention had been devoted to rooting out the pernicious doctrine that the faculties of the mind can be trained simply by pointing out that no such faculties exist, educational practice would be measurably better to-day than it is.

If the memory can not be trained or developed as a memory, if the observation or the imagination or the reason or the will can not be trained as a faculty or power, then the doctrine of general education must forthwith be given up, for it is the doctrine that they can be so trained. When the doctrine of general education is given up, as it must be, only specific education remains.

The question which has been so diligently investigated in recent years is not at all the question whether the "powers of the mind" can be trained. No investigator even thinks it worth while to consider so absurd a proposal. The question which is being investigated is to what extent that which is learned in one context is and can be applied in another context. In many respects this is purely a psychological question and of no great interest to educational practitioners. If it were not for the fact that loose thinking has confused two issues in such a way as to bring about a general belief that the doctrine of faculty training has been supported by investigations which are not at all concerned with faculties or the training of faculties, teachers would

have paid little or no attention to the meager and unsatisfactory results which psychological investigators report concerning the spread of training from one undertaking to another. For this unfortunate result we must blame the logical confusion of these psychological investigators themselves.

"We note," writes Professor Dewey in his "Democracy and Education," "that the distinction between special and general education has nothing to do with the transferability of function or power. In the literal sense any transfer is miraculous and impossible. But some activities are broad; they involve a coordination of many factors." Training in these acts is specific, but they have many applications and are called for in many different situations. Hence a specific activity like a method of going to work to solve problems or to memorize verses may be applied in many different contexts and have a broad utility. No one thinks for a moment that we shall ever be called upon after we leave school to use the methods which we acquired in school, on material exactly like that in connection with which we learned them. The arithmetical problems a boy will solve in life are different from those he solves in school; and the political questions a student meets in the world are not exactly the same as those he studies in the class in government. But they are recognizably similar, else he could not possibly use his school learning to react to them. No two situations in which we find ourselves are ever alike and yet we make over our past experience to meet new situations if they are not so completely novel as to

confuse us. The mind is a generalizer. It is constantly engaged in stretching past experience to fit new needs. Everybody must, I think, admit that. Now the question which is being experimentally determined in laboratories is: within what limits does this process of generalizing take place, or within what limits can specific learning be used? But very unfortunately the nomenclature which is employed in discussing this new problem is the nomenclature of formal or general discipline.

Taking these experiments for what they really are as efforts to determine within what limits processes are generalized let us ask what they show. "Does training transfer? Under conditions of training studied in these thirty investigations we can answer unequivocally," says Rugg, that "there is distinct evidence for the so-called transference of training. The experimental training of the abilities of either adults or school children in either laboratory or schoolroom will result in an increased efficiency on the part of the subjects, in other abilities which are in some way related to the trained abilities. . . . 'Transfer' is an accepted fact, but as to the extent to which training transfers and the most favorable conditions for its transfer, specialists are not always agreed . . . The investigators may be grouped into two schools: (1) those who believe that the effect of training is quite specific and who oppose the view that transfer can be possible through any form of 'generalization.' (2) Those who believe that the effect of practice can be generalized. Numerically the latter are much the stronger."

Of the nineteen investigators who consider the question how transfer of training is possible — eleven of the thirty do not consider this question — fifteen declare that it is possible through certain factors of generalization. The experiments show that it is due to devising methods of learning. Dr. Rugg quotes one writer's explanation as significant. "Our instruments do not improve; we only learn to use them better. Those who do not learn to use their instruments . . . from practice show little or no transfer of improvement through practice." "The experiments," Dr. Rugg continues, "show that we must distinguish between the ideational possibilities of transferred improvement and the vain hope of the 'spreading' function of rigidly developed sensory, perceptual and motor adjustments. These latter have to be taken over into new situations unchanged, and can operate with increased efficiency only as the conscious utilization of them in combination has been made more effective through experience. Thus the studies indicate that the law of learning has to be made a conscious matter of ideation in order to insure any considerable amount of transferred improvement. The largest improvement seems to come when the subject discovers that certain methods are helpful."

These results seem then to confirm Professor James' conclusion completely: "When boys improve by practice in ease of learning by heart, the improvement will, I am sure, be always found to reside in the mode of study of the particular piece (due to the greater interest, the greater suggestiveness,

the generic similarity with other pieces, the more sustained attention, etc.) and not at all to any enhancement of the brute retentive power."

Methods of study and of work then can be taught in such a way that they will be helpful in many different situations. We can learn to use our instruments better and better, but our innate powers can not be changed.

The most thoroughgoing and critical study of this entire subject, I think, is to be found not in the work of American investigators, but in Dr. Sleight's recent book, "Educational Values and Methods." [1] Professor Spearman, the distinguished director of the psychological laboratory of the University of London, who has hitherto been classed among the believers in at least a qualified formal discipline, declares in the preface which he writes to that book that "the great assumption upon which education has rested for so many centuries is now at last rendered amenable to experimental corroboration — and it proves to be false! To the demolition of the ancient idol no one has contributed more powerfully than Dr. Sleight; his . . . experiments, involving very great labor for many years, were characterized by a perfection of technique that extorted admiration even from those investigators whose previous methods and results he was showing to be faulty. . . . The conquests of science are not made by storm, but by slow sap. . . . His main principle indeed is fixed in the bedrock of accurate psychological experiment. . . . When it becomes advisable

[1] Oxford, 1915.

that old branches of instruction should give way to new, how shall this be demonstrated to those for whom the old branches mean livelihood? Can they be expected to stand so far above all other classes of humanity, that they will connive at their own execution? We must anticipate, rather, all the bitter and desperate struggle that invariably accompanies grave menace to vested interests."

I can not do better than to ask you to read that book. I am satisfied that it is indeed an epoch-making work. But let me tell you very briefly what it is about. Dr. Sleight examines earlier experiments critically and finds them faulty and inconclusive in certain respects. He undertakes a series of experiments more carefully worked out than any of the earlier ones. A series of ten memory tests was followed by twelve half-hour periods of practice, four periods in each week, then ten more memory tests were given, followed again by twelve more periods of training and these again by a third series of tests. The experiment was carried on with children of an average age of twelve years and eight months in three different schools.

The ten tests were:

1. The exact placing from memory of dots within circles after several views of a large cardboard copy.
2. The memorizing of dates.
3. Nonsense syllables.
4. Verse.
5. Prose extracts.
6. The recall of the substance of a prose extract.
7. Geographical positions, two or three at a time,

were shown once upon a wall map and the children were then required to place them from memory in an outline map of the world.

8. Dictation of continuous prose in portions of increasing length (from eight to nineteen words).

9. Letters dictated from four to eight at a time.

10. Christian names and surnames dictated together in twos, threes and fours. The surname was then given and the children were required to write down the Christian name belonging to it.

In each school the tests were given in a different order. After the first test series had been given the children in each school were arranged into four groups.

1st. A group which took all the tests but none of the practice training.

2d. A group which practiced with verse.

3d. A group which practiced tables.

4th. A group which practiced the reproduction of the substance of prose extracts.

The children in these groups were of approximately equal ability. They were grouped in this fashion to find out if practice training of one kind had more influence upon doing the work of the tests than training of another kind.

Every precaution was used to do careful and exact work. What were the results?

1st, as was to be expected, there was a general improvement in all the tests on the part of all who took them.

2nd, there was no general improvement of trained over untrained. There was no sign of any "formal discipline" such as Meuman believed that

his experiments showed, but of which Professor Dearborn could find no evidence when he repeated Meuman's tests. The pupils who took only the tests became more proficient in the ten items of the tests and the pupils who were trained in particular ways became more proficient in the matter upon which they were trained, but there was no heightened proficiency in the nine-tenths in which they were not trained. Dr. Sleight concludes that "there is nothing therefore to warrant the assumption of a general memory development." The effect of the training throughout was specific. Practice in reproducing prose led to greater skill in reproducing prose, but not in memorizing verse or nonsense syllables. Practice in memorizing tables did not have any effect in date memorizing. Training in verse and tables helped materially in memorizing nonsense syllables because of the use of rhythm in all three operations, but practice in prose substance left nonsense syllables unaided.

After this elaborate study was made with children, a similar investigation was carried out with two classes of training college women students from eighteen to nineteen years of age with almost identical results. Again there was general improvement in the second test series, but again there was no general superiority of trained over untrained. Dr. Sleight states as his conclusion therefore (1) "That specific memory training is specific in its effects; there is no general memory function which can be developed by feeding it upon any one material. (2) Psychical factors, such as attention and imagery, are not capable of general development merely by

means of one-sided training. Attention to arithmetic is an activity which may increase without having any influence whatever upon the power to give attention to good manners or to the names of streets. Acts of attention are . . . rather distinct and separate acts, differing from one another according to the stimuli which set and keep them going." (3) In cases where improvement was brought about in one exercise by practice in another, a computation shows that direct practice was worth on the average 144 times as much as indirect.

We have heard a great deal about the transference of training in recent months. Dr. Sleight shows by these figures that no one should study one thing in order to learn another unless he has 144 times as much leisure and energy to devote to the indirect practice as he needs for the direct. There is no warrant for the belief that wherever common elements exist between one operation and another, the effects of training will be transferred; on the contrary, the most that can be said, is that wherever training is transferred, common elements exist. Spread of training is very rare and so uncertain and slight as to afford no justification whatever for the study of one subject in order to learn another. We can not say that learning to think out arithmetical problems will help us to think out geographical problems or political problems. We can not even say that learning to solve the arithmetic problems of the book will help us to solve those of the market unless our study of arithmetic in school has been of so broad and concrete and practical a kind that we

will inevitably recognize the applicability of what we learned in school to the problems that now face us and demand solution. There must not only be a common element in the practice work and the life work, it must be a usable common element. The only way to make it usable is to make the student keenly aware of its connections with the very matters upon which he is to use it.

Thus the only education we can possibly believe in is specific education. We must be taught to think the thoughts and work with the things which we shall have to work with as long as we live. Just those things must be studied and not subjects which are said to be valuable only while we study them, but not after we leave school. We must regard education as concretely preparatory, and every lesson we want our students to learn we must teach them, and in so far as we can, we must teach it with reference to the very matters upon which they will have occasion to use it.

The war is showing us how perversely specialized the mental processes of peoples, even the best educated ones, are. Our minds seem to react by preference only to that with which they are familiar and to that only in familiar ways. Inventions would not be so rare if we could readily apply the principles of work with which we are familiar to new situations with which we are not familiar.

The fundamental fallacy of the theory of formal or general discipline, as Professor Dewey has said, is its insistence that activities and processes can be acquired apart from the subject matter upon which

they are to be used; but our acts are always specific. We talk about *the memory* or *the reason*, but that is only a name for remembering this or remembering that or thinking about this or thinking about that. The acts are many. The name we have for them is one. This whole misguided and preposterous theory of education with all the harm it has caused the young of many generations is only another one of those many confusions which language has caused through our uncritical tendency to substitute words for things. Memory is just a word, there is no such a thing. Only memories exist, and these memories are always of this, that, or the other happening. Reason is just a word, there is no such thing. Only reasonings exist, and they are always reasonings about the high cost of living or the war in Europe or the Mexican situation or some other particular question. If we want folks to remember things which are worth remembering, we must let *the memory* alone and help them to memorize the particular things which are worth remembering. If we want them to reason about the things which are worth reasoning about, we must let *the reason* alone and devote ourselves to the specific task of reasoning about that which we want to reason about. This, that, or the other can be memorized or reasoned about, but the skill is limited to the content about which it is generated. The more limited and specialized the content is which the student works with, the more fixed and limited are the actions which he learns to perform and the more a specialist he becomes. He may learn to reason about cases, moods, and tenses in such a

way as to distinguish them with nearly unerring accuracy, but the more he fixates the forms of words the less will he fixate the thoughts which they normally call forth; and the more of a specialist in verbal forms he becomes, the less of a specialist in meanings he will be, for thoughts and meanings must be neglected in order that forms and endings may be fixated.

To the objection that there must be such a thing as general discipline or the many thousands of young men who for nearly two centuries have been subjected to a strictly formal training could never have become as proficient leaders in the affairs of life as so many of them became, we have only to answer that they perhaps became proficient in other things in spite of these studies, not because of them. When we remember that the young people who pursued these formal studies were a selected company of the leading spirits in their generation when they were admitted to the schools, it is not unreasonable to suppose that some of them, at least, retained their natural superiority, not quite unimpaired to be sure, but in a marked degree, even after submitting themselves to forms of work which do not seem to have been productive.

At any rate, it must be noted that those who contend that our minds are trained to do one thing by doing another have never yet proved their case, though the burden of proof is on them since they make the assertion. That failure has not been due to an oversight on their part either, but rather to the fact that their case can not be proven.

In all this there is one confusion which we must keep clear of. When we say that all training is specific we do not mean that education should be narrow. It can not be that and be the kind of education that we want or that most people want. It was sufficient for the hunter to teach his son to shoot with the bow and arrow, but we have many kinds of bows and arrows now, rifles and 42-centimeter guns and systems of national and international law and morals and sciences and histories and literatures and philosophies. They are all instruments which we must learn to work and each one must be taught to shoot with a representative number of them. But general education in this sense is a combination of special or particular forms of education.

DOES THE STUDY OF MATHEMATICS TRAIN THE MIND SPECIFICALLY OR UNIVERSALLY? [1]

EDUCATION is, or at least aims to be, a conscious process and a purposive undertaking. To teach anything we must first know what purpose is to be served by it and how it must be taught so that that purpose will be served. As there are many subjects which might be studied and many ways in which each one of them might be presented, our first and continuing duty is to select from the whole number of possible subjects those few which are indispensable for the purposes of life, and when we have done that, we must next select from the many possible ways of studying these subjects those few ways of approaching them which are likely to lead to valuable results.

Now, why should one study anything? As nearly as I can discover there are three answers which are given to this question. First, we must study subjects because we owe it to them to do so. It is a debt of honor, of reverence, of obeisance, or worship which we should pay them. We do not study them for what they do for us or what they will enable us to do. They are the ends. We are the means. This is subject worship, a kind of liturgical devotion

[1] An address before the Association of Teachers of Mathematics in New England, April 28, 1917.

which we are told we must pay to science, literature, mathematics, philosophy when they are hypostatized into self-existing realities. Its favorite call to prayer is science for the sake of science, literature for the sake of literature, knowledge for the sake of knowledge, and art for art's sake. This is a peculiarly inhuman belief which annually requires the sacrifice of hecatombs of young lives. It seems to us to be just as idolatrous to worship the creations of men's minds as to worship the creations of men's hands. We are recommended to beware of idols. The creator is more to be revered than his creation. When the creation is ascribed virtue in itself, the proper relations are reversed. Knowledge, art, science, literature, philosophy and mathematics exist for man's sake, not he for them. The question always is, what are they to him, what can he make out of them? what can he do with them? Knowledge can not be its own end. It must be for something. It must perform some work, must offer some assistance, must serve some human purpose. We may take it on credit, but the time must come when it will pay some sort of dividends. If it does not, it is simply useless and unmeaning. It makes no difference in a world in which only such things are regarded as real as make a difference.

The second reason for studying anything is that we can not get along without it. It is an indispensable aid to us in doing our work. It may serve us in many ways, but we want it because in days to come we shall use it. It is because we are going to read that we study reading, are going to write that we

study writing, are going to use geography and history, literature and science as long as we live that we study geography, history, literature and science; and the parts of these studies which are outworn or have no definite utility we omit, giving our attention exclusively to those aspects of them which have abiding value. According to this view studies are for use and education is preparatory. There are so many difficult things that each one of us must know how to do in order to get on with nature and with our fellowmen, that the whole of life is not sufficient for us to learn them. All that we can do in youth is to master the beginnings of a few of the great human operations. Advanced life must help us to perfect our knowledge of them. From this point of view it is immeasurably important that we do not waste our time upon studies or parts of studies which we can not use in after years and immeasurably important that we study the subjects that have definite utility in such ways that we will go on using them and increasing our mastery of them through the years that are to come. The school, then, exists to provide special opportunities for us to become acquainted with the first stages of our life business and must introduce us to it in such a way that we shall, from the first, appreciate its meaning and perform it with a growing interest and an expanding sense of its worth, so that when our school days are over we shall know that our education has but begun and will go on applying and using and perfecting our skill in the great arts of which it has taught us the fundamentals as long as we may live. Educa-

tion, according to this view, is specific throughout. Its purpose is to enable the student to acquire the beginnings of certain indispensable forms of human skill without which he can not be a society-supporting unit in a world in which men must live and let live and help themselves and each other in doing so. Every form of skill that we attempt to teach him gets its place in the school program solely because he can not live a civilized life without practicing it. Traditional reasons are not a sufficient warrant for teaching anything. The course of study is to be made with reference to the future, not because of veneration for the past or because of blind adherence to the prevailing practice of to-day. The training of the young is so serious a responsibility that it must be made throughout a conscious undertaking. Their time must not be wasted and their futures must not be trifled away. Nothing must be attempted in their education without demonstrable reasons for attempting it. Few men who have not followed closely the advances which have been made in the science of education in recent years know how completely present-day educational theory differs from the crude traditionalism of an earlier time. The new efficiency program which schools are trying to put into practice now is first to analyze the habits we want the young to form, to set up specific aims by whittling our purposes to the finest point in helping them to form them, and to measure carefully the results which are brought about by instruction. The effort of to-day is to do away with aimless routinary education, by substituting for it an intelligent pro-

cedure which shall be as rational as our present knowledge demands and warrants.

The third reason which has been assigned for studying anything is not that we owe it to the thing we are invited to study to show it this tribute of respect and adoration, or that we shall need it in order to do our part in carrying on the unfinished business of the race. The third reason for studying certain subjects is that they perfect the mind and make it a better mind than it was before. The main province of the school, according to this view, is to train the mind not by putting it to work upon the matters it will have to work upon as long as it is a living mind, but to prepare it to work upon these matters by working upon others. This might be called indirect education, because it maintains that the best way to learn to do one thing is to learn to do another. But if the theory were put as baldly as that, no one would believe it. It is couched in a more seductive form. Certain studies, we are told, teach us not only to work with their content, but to work with every content. They have far-reaching effects — they enable us to do everything we undertake better because we have pursued them. Much of our learning we must get at retail, acquiring it painfully process by process and never getting any more than we bargain for, and mostly less. I have never heard teachers of history, for example, say that studying history teaches anything but history, or teachers of Spanish that studying Spanish teaches anything but Spanish. Just recently we have heard from eminent physical trainers that military training

teaches military training and contributes nothing that makes for bodily well-being, but much that harms it. But I have heard teachers of Greek and Latin and French and German say that the study of their subjects is not intended to teach Greek or Latin or French or German. The study of their subjects is intended to improve the faculties of the mind. They claim to educate by wholesale, to give instruction in preferred subjects. They do not set out to teach their students the subjects which they study; they teach them, they say, something far more valuable. There are many variants of this claim and as nearly as I can discover no one knows exactly what they mean. I heard one man say in a discussion a while ago that he took it as established that we must sharpen an ax on some other material than that which we proposed to cut with it, likening the mind to an ax and the studies which he espoused to a grindstone; but the mind which God gave us is a pretty sharp instrument from the beginning, and we do not need to get inside it to do any burnishing or repair work there.

I find in Professor Keyser's interesting discussion of mathematics [1] some statements which are puzzling and very hard to make out. He says:

> The science is no catholicon for mental disease. There is no power for transforming mediocrity into genius. It can not enrich where nature has impoverished. It makes no pretense of creating faculty where none exists, of opening springs in desert minds. . . . The great mathematician, like the great poet or the great administrator, is born. My contention shall be that where the mathematic endowment is found there will usually

[1] Keyser, Mathematics, Columbia University Press, New York, 1907.

be found associated with it, as essential implications of it, other endowments in generous measure, and that the appeal of the science is to the whole mind, direct no doubt to the central powers of thought, but indirectly through sympathy of all, rousing, enlarging, developing, emancipating all, so that the faculties of will, of intellect and feeling learn to respond, each in its appropriate order and degree, like the parts of an orchestra to the "urge and ardor" of its leader and lord.

If the study of mathematics can do that or anything like that it is clear that we must all study mathematics, for though many of us have little occasion to use more than the merest elements of this great science, we all want our minds aroused, enlarged, developed and emancipated so that the faculties of will and intellect and feeling will respond. But is Professor Keyser not claiming too much? If mathematics could indeed do these things would it not be the philosophers' stone? And if it can do these things I trust it will not be thought impertinent to ask why it has not done them. Surely no greater harm can be done to any science than to overestimate its claims and mistake its nature, and no greater harm can be done to the young than to submit them to a laborious and time-consuming discipline if we are not certain that that discipline can accomplish what we claim that it can accomplish.

Let us stop long enough to understand each other. The question which we are to consider is not the question of the value of mathematics — nobody doubts its value to any one who has occasion to use it. The question we are to consider is whether it is to be regarded as unlike other studies which are valuable to those who use them and not of much account to

those who do not, but is instead a preferred study which is to be pursued not for the sake of what we can do with it, but for the sake of what it will do to us. The value of mathematics as a tool, a human device for doing its part of the work of the world, is not disputed — it never has been. The value of mathematics as a universal discipline is not proven; it is disputed. Does learning mathematics teach mathematics as Robert Browning said that "learning Greek teaches Greek and nothing else; certainly not common sense if that have failed to precede the teaching"? Or does learning mathematics teach reasoning in general, not to say anything of its power to arouse, enlarge, develop, and emancipate the faculties of will and feeling?

If we go back to the Greeks who invented this great science, we find them taking pains to put limits to their reliance upon it. In the "Memorabilia" of Xenophon we are told that Socrates had very decided views as to the value of geometry.

> Every one (he would say) ought to be taught geometry so far, at any rate, as to be able, if necessary, to take over or part with a piece of land, or to divide it up or assign a portion for cultivation, and in every case by geometric rule. That amount of geometry was so simple indeed and easy to learn, that it only needed ordinary application of the mind to the method of mensuration, and the student could at once ascertain the size of the piece of land, and with the satisfaction of knowing its measurement depart in peace. But he was unable to approve of the pursuit of geometry up to the point at which it became a study of unintelligible diagrams. What the use of these might be he failed, he said, to see; and yet he was not unversed in these recondite matters himself. These things, he would say, were

enough to wear out a man's life and to hinder him from many more useful studies. . . . Socrates inculcated the study of reasoning processes, but in these equally with the rest, he bade the student beware of vain and idle over-occupation. Up to the limit set by utility he was ready to join in any investigation and to follow out an argument with those who were with him; but there he stopped.[1]

This passage is thoroughly in keeping with Cleanthes's statement that Socrates cursed as impious "him who first sundered the just from the useful." Socrates's disciple, Plato, made a larger use of mathematics in the course of study which he outlined for the few selected youths whom he proposed to train to be philosopher-kings in the Republic of his vision. You will remember that he prescribed for them a ten-years' course in arithmetic, geometry, astronomy and music, because "these studies lead naturally to reflection, but seem never to have been rightly used." The example which he gives of the way in which he would use these studies shows that he did not rely upon such a knowledge of them as our students are invited to get to lead his disciples to reflection.

When there is some contradiction always present and one is the reverse of one and involves the conception of plurality, then thought begins to be aroused within us and the soul, perplexed and wanting to arrive at a decision, asks: "What is absolute unity?" This is the way in which the study of the one has a power of drawing and converting the mind to the contemplation of true being. You are right, he said, the observation of the unit does certainly possess this property in no common degree, for the same thing presents at the same moment the appearance of one thing and an infinity of things.[2]

[1] Xenophon, Memorabilia, IV, 7. [2] Republic, 524 and 525.

Plato's study of arithmetic is undertaken to consider the nature of numbers, and his geometry, the nature of space. It is intended to lead the student to discover the reality of mind, to know himself the thinker, not the science of mathematics. Will ten years of such study give him a trained mind? These studies he says are

useful, that is, if sought after with a view to the beautiful and good; but if pursued in any other spirit, useless. . . . Do you not know that this is only the prelude of the actual strain which we have to learn? For you surely would not regard the skilled mathematician as a dialectician? Assuredly not, he said. I have hardly ever known a mathematician who was capable of reasoning.

We find Aristotle, too, declaring that

the man of education will seek exactness so far in each subject as the nature of the thing admits, it being plainly much the same absurdity to put up with a mathematician who tries to persuade instead of proving, and to demand strict demonstrative reasoning of a rhetorician. Now each man judges well what he knows and of these things he is a good judge: on each particular matter he is a good judge who has been instructed in it, and in a general way the man of general cultivation.[1]

But this general cultivation is to be gotten by familiarity with many subjects, not from the study of any one subject.

The capacity of receiving knowledge is modified by the habits of the recipient mind. For as we have been habituated to learn, do we deem that everything ought to be taught, and the same object, presented in an unfamiliar manner, strikes us not only as unlike itself, but from want of custom as comparatively strange and unknown. . . . We ought therefore to be educated

[1] Ethics, 1094*b*.

to the different modes and amount of evidence which the different objects of our knowledge admit.[1]

There is no recognition of mathematics as teaching more than mathematics here. These Greeks do not rely upon it as a training in universal reasoning.

No such claim is made for the study until the faculty psychology brought faculty education in its train some time about the beginning of the 18th century. Faculty psychology is everywhere recognized as false doctrine since the criticism of Herbart gave it its deathblow in the early years of the 19th century. But faculty education still remains, though the psychologists tell us that there are no faculties to be educated. This of itself is a curious commentary upon the unscientific character of our education.

But before I consider the claim that mathematics trains the faculty of reasoning I want to point out that there have from its first appearance as a philosophy of education been almost or quite as many competent critics of this doctrine as upholders of it. I trust I shall not unduly tax your patience if I refer to that remarkable article "On the Study of Mathematics as an Exercise of Mind," which Sir William Hamilton published in 1836. Professor Keyser calls it "Sir William Hamilton's famous and terrific diatribe against the science," but opinions of mathematicians seem to differ about it, for Professor Young finds it instructive to the teacher of mathematics and regards it as "a pity that more such criticisms are not made." Whatever

[1] Metaphysics, II, 3.

else Sir William Hamilton's essay may be, it is not a diatribe against the science of mathematics. He says expressly:

> In the *first* place that the question does not regard the *value* of *mathematical science considered in itself, or in its objective results*, but the *utility of mathematical study*, that is, *in its subjective effect, as an exercise of mind;* and in the *second*, that the expediency is not disputed, of leaving mathematics as a coördinate, to find their level among the other branches of academical instruction. It is only contended that they ought not to be made the *principal*, far less the *exclusive* object of academical encouragement. We speak not now of *professional* but of *liberal* education; not of that which considers the mind as an instrument for the improvement of science, but of this which considers science as an instrument for the improvement of mind. Of all our intellectual pursuits the study of the mathematical sciences is the one whose utility as an intellectual exercise when carried beyond a moderate extent has been most peremptorily denied by the greatest number of the most competent judges; and the arguments on which this opinion is established have hitherto been evaded rather than opposed.

If any one has any doubt about the number of opinions which he musters to support his contention "that the tendency of a too exclusive study of these sciences is absolutely to disqualify the mind for observation and common reasoning," he has only to consult the article to learn how numerous they are. And I do not think it is fair to refute this article by ascribing it to "jealousy, vanity and parade of learning," or to set it aside by declaring "that Hamilton by studied selections and omissions deliberately and maliciously misrepresented the great authors from whom he quoted — d'Alembert, Blaise Pascal, Descartes and others, distorting their express and un-

mistakable meaning, even to the extent of complete inversion." [1] It is easy to make charges against men who quote. That is a familiar line of attack. They can be charged with quoting what they should not have quoted, or with not quoting what they should have quoted. Such charges divert attention from what one has quoted but they do not answer it. The question is not whether Sir William Hamilton quotes less than there is to quote — every one who quotes at all, selects what he will quote — and the question is not whether the statement which he quotes in any given case is the average statement of its author upon the subject or the final result of a lifelong consideration of it. These men may have said other things at other times and in other places. They could hardly have been mathematicians without doing so. The question is whether they also at any time or in any place said what Sir William Hamilton quotes them as saying. Did d'Alembert ever say "we shall content ourselves with the remark that if mathematics (as is asserted with sufficient reason) only make straight the minds which are without a bias, so they only dry up and chill the minds already prepared for this operation by nature." [2] It is plain that if he contented himself with that remark, we must be contented with that remark as coming from him. And did Descartes say that "the study of mathematics principally exercises the imagination in the consideration of figures

[1] Keyser, "Mathematics," pp. 23, 24, Columbia University Press, 1907.

[2] "Mélanges," IV, p. 184, 1763.

and motions "[1] and to another correspondent "that part of the mind, to wit the imagination which is principally conducive to a skill in mathematics, is of greater detriment than service for metaphysical speculations,"[2] and did Descartes's biographer, Baillet, write:

It was now a long time since he had been convinced of the small utility of the mathematics, especially when studied on their own account, and not applied to other things. There was nothing in truth which appeared to him more futile than to occupy ourselves with simple numbers and imaginary figures, as if it were proper to confine ourselves to these trifles without carrying our view beyond. There even seemed to him in this something worse than useless. His maxim was that such application insensibly disaccustomed us to the use of our reason and made us run the danger of losing the path which it traces.

And does his Life contain the statement that in a letter to Mersenne, written in 1630:

M. Descartes recalled to him that he had renounced the study of mathematics for many years; and that he was anxious not to lose any more of his time in the barren operations of geometry and arithmetic, studies which never led to anything important.

And does the author of Descartes's life in a later passage say "in regard to the rest of mathematics" (he has just been speaking of astronomy)

those who know the rank which he held above all mathematicians, ancient and modern, will agree that he was the man in the world best qualified to judge them. We have observed that after having studied these sciences to the bottom, he had renounced them as of no use for the conduct of life and solace of mankind.[3]

[1] "Lettres," pp. i–xxx. [2] "Epist.," pp. ii–xxxiii.
[3] "La Vie de Descartes," I, pp. 111, 112, 225.

It is no answer to such citations to make a great bluster about other statements which might have been quoted and to draw back from these as though it were a profanation even to think of them. The question which must be faced is: Did d'Alembert and Descartes and Descartes's biographer ever at any time say these things? The one legitimate way to attack Sir William Hamilton's use of them as evidence is to deny that they are to be found in the writings of these men. That denial is not made and can not be made. These are statements which d'Alembert, Descartes and Descartes's biographer made, and made in words which mean exactly what we have indicated, and must be reckoned with.

The passage which is quoted from Pascal is quoted at length. In it Pascal says:

> There is a great difference between the spirit of mathematics and the spirit of observation. In the former the principles are palpable but remote from common use; so that from want of custom it is not easy to turn our head in that direction; but if it be turned ever so little, the principles are seen fully confessed, and it would argue a mind incorrigibly false to reason inconsequently on principles so obtrusive that it is hardly possible to overlook them. But in the field of observation, the principles are in common use and before the eyes of all. We need not turn our heads, to make any effort whatsoever. Nothing is wanted beyond a good sight; but good it must be; for the principles are so minute and numerous that it is hardly possible but some of them should escape. The omission, however, of a single principle leads to error; it is, therefore, requisite to have a sight of the clearest to discern all the principles; and then a correct intellect to avoid false reasonings on known principles. All mathematicians would, thus, be observant had they good sight, for they do not reason falsely on the principles they know;

and minds of observation would be mathematical could they turn their view toward the unfamiliar principles of mathematics. The cause why certain observant minds are not mathematical is because they are wholly unable to turn themselves toward the principles of mathematics; but the reason why there are mathematicians void of observation is that they do not see what lies before them, and that accustomed to the clear and palpable principles of mathematics and only to reason after these principles have been well seen and handled they lose themselves in matters of observation where the principles do not allow of being thus treated. These objects are seen with difficulty; nay, are felt rather than seen, and it is with infinite pains that others can be made to feel them if they have not already felt them without aid. They are so delicate and numerous that to be felt they require a very fine and a very clear sense. They can also seldom be demonstrated in succession as is done in mathematics, for we are not in possession of their principles, while the very attempt would of itself be endless. The object must be discovered at once by a single glance and not by a course of reasoning, at least up to a certain point. Thus it is rare that mathematicians are observant and that observant minds are mathematical; because mathematicians would treat matters of observation by rule of mathematics, and make themselves ridiculous by attempting to commence by definitions and by principles, a mode of procedure incompatible with this kind of reasoning.[1]

But Sir William Hamilton is not satisfied with this showing that in learning mathematics we do not learn to reason about all things, but only about mathematics; he quotes from scores of other persons to the same effect. His argument is not met by Professor Young's statement, that as mathematics was then taught the subject had, as Sir William Hamilton contended, but small value, "but mathematics is no longer taught as a purely passive subject to-day."

[1] "Pensées de Pascal," p. 1, Article X.

That may be true and it is good news if it is true, but Sir William's point is that mathematics can not be taught in such a way as to enable the student who has studied it, no matter now diligently, to reason well about everything. Its lessons have no such universal reference and its methods of reasoning no such universal applicability. The reasoning which life exacts of us is upon contingent matter, the reasoning to which mathematics habituates us is upon necessary matter. In mathematics the premises are given; in life for the most part they must be found. The question we try to answer in mathematics is what conclusions follow from these premises; the question we are forced to answer in life is, of what principle is this case an instance or under what principle does this particular belong.

The case against mathematics, not as a science but as a universal trainer of the mind, has become very much stronger since 1836 than it was in Sir William Hamilton's brilliant summary of it. To the crowd of witnesses whom he summoned, the names of Huxley and Comte and many another leader of human thought must now be added. The breakdown and abandonment of the faculty psychology left the doctrine of faculty education literally without a leg to stand on. If instead of one memory we have as many memories as the things we remember, we can not train or develop *the* memory, for there is none to train. If our nature is so economical that we forget all the things which we have no occasion to remember and remember only those things in which we have taken a lively interest or about which we

have built up a net of associations, then the way to develop one's memory is to make no effort to develop it, but to spend one's strength instead in finding reasons for being interested in the thing which we want to remember. Let the memory alone, take no memory-training lessons, give up forever the notion that a memory ever existed outside of the world of fancy which could remember all things equally well, let the memory alone and give your whole attention to comprehending what you want to remember. That is all that you or any one else can do. This, you see, requires us to shift our attention wholly from the mind to the content.

The same criticism applies to the training of *the* reason. No such faculty exists. We reason well about one interest and badly about another. Such a thing as an all-round reasoner is not to be found. The agriculturalist reasons well about growing crops, the commission merchant knows more about how to sell them. The geologist reasons well about rocks, the biologist about vital processes, the lawyer about laws, the engineer about the strength of materials, the physician about diseases, and the tax expert about the incidents of taxation. The United States wants 150,000 ship carpenters. House carpenters will not do. We are specialists all. The study of mathematics makes a specialist out of the man who pursues it as his life work. How can the same study that makes specialists out of adults make generalists out of the young? When we study mathematics we learn to make analyses, but to analyze the mathematical given is not the same thing, nor even the

same sort of thing, as to resolve an economic situation into its constituent elements, or a historical period into the forces which are operating in it, or a crime into the factors which indicate its authorship. There are many forms of analysis, and only the man who is familiar with a given subject matter can resolve it into its parts. The same thing is true of inferences and of the tracing of relations. The type of analysis or inference which is valid in one field is not valid in another. The universe of facts is no snug-fitting box with interchangeable parts which we can put together and take apart in a few well-defined ways. It is infinitely complex, and he who is being trained to operate any part of it must be familiar with the characteristics of his particular field of fact and the processes of manipulation which belong to it. Says Professor Dewey, in speaking of the doctrine of formal discipline:

> Going to the root of the matter, the fundamental fallacy of the theory is its dualism; that is to say, its separation of activities and capacities from subject matter. There is no such thing as an ability to see or hear or remember in general; there is only the ability to see or hear or remember something. To talk about training a power, mental or physical, in general, apart from the subject matter involved in its exercise, is nonsense.

If we turn to the experimental studies which have been made upon this subject, we must note that they were not undertaken to inquire whether the memory, or the imagination, or the observation, or the reason can be trained as a faculty. No one who is at all conversant with modern psychology takes that

question with any seriousness whatever. Any investigation of it would be a mere waste of time.

Since the psychologists agree that we have a different memory for everything we remember, a different attention for everything to which we attend, a different imagination for everything we imagine, and a different reasoning for everything we reason about, why should there be any investigation to find out to what extent learning to do one thing will help us to do another? The answer is that though our acts are different, some of them have common elements and call forth identical responses. If we learn to count marbles, we can count eggs, for the act is the same in both cases, but it does not follow that if we learn to count objects we can count abstractions; that is a new art and must be learned, nor does it follow that if we can count abstractions, we can successfully number objects. There is a great gulf fixed between theoretical and practical arithmetic and between theoretical and practical mathematics throughout. A banker friend of mine declares that counting money in a large bank is so different from counting money in a small bank that city banks hesitate to employ as assistants men who have been trained in country banks. There is much that is common to the two processes, but there is at the same time so much that is different that training in one does not prepare for the other.

One who learns to drive a Packard car can drive a Stanley steamer — that is, he can steer it, for he is only doing over again what he has already learned to do — but one who can adjust a Packard engine

can not adjust the engine in a Stanley steamer without a special knowledge of that engine.

The ability to use the knowledge which we have acquired in one connection in another is sometimes said to be due to a transfer of training. Professor Dewey tells us that "in the literal sense any transfer is miraculous and impossible." What then does the transfer which is said to take place really mean? Learning to drive a Packard car enables one to drive a Stanley steamer, because when we drive the steamer we are simply doing over again what we have already learned to do. Nothing is transferred; instead, an act we have already learned to perform is repeated in a context very like the context in which it was learned. If we could transfer our training from one context to another quite freely, we would not go on merely repeating what we have already learned. We would all become inventors. The fact that inventions are and always have been so rare shows quite clearly that we do not do that. We do over and over again what we have already learned to do; but within what limits do we repeat our familiar reactions? That is the question which the experimentalists are answering and their answers all show that the limits go but a little way beyond the lesson itself and that the range of its application is very narrow indeed.

Some of these experiments seek to determine the effects of training in mathematics upon the performance of other kinds of work. One of them is the series of tests conducted by Lewis at Dartmouth. Two test papers were prepared, one containing three

originals in geometry, the other three questions in practical reasoning concerning the value of high-school education to the student and the community. Both papers were submitted to twenty-four different groups of high-school students. The results I give in Mr. Lewis's own words:

> If we take the first five mathematical reasoners from each of the 24 groups, we have in all one hundred and twenty pupils most excellent in mathematical reasoning. Of this number 76 or 63 per cent are at the foot of the practical reasoning series, conspicuous for their inefficiency in practical reasoning. Of the number of pupils at the foot of the mathematical reasoning series, 57 or 47 per cent are conspicuous for their positions at the head of the practical reasoning series.

To supplement this test the records of Dartmouth students in the classes in mathematics and in courses in law were compared. The results were much the same.

> Fifty per cent of the best students in law were conspicuous for their poor showing in mathematics and 42 per cent of those poorest in law stood at the head of the series in mathematics.

More recently at the University of Illinois Dr. Rugg conducted a classroom experiment in which two groups, one of 413 and the other of 87 college students, were first measured for efficiency in the mental manipulation of spatial elements. The first group of 413 students then took a regular course in descriptive geometry during a college semester of 15 weeks. The other group of 87 college students had no such training during this interval. At the end of the 15 weeks both groups were again measured as they had been at the beginning to discover the effect

of the course in descriptive geometry which the one group had taken and the other had not, upon specific abilities in the mental manipulation of spatial elements, (*a*) of a strictly geometrical type; (*b*) of a quasi-geometrical type; and (*c*) of a non-geometrical type. What was the result? Members of both the trained and the untrained group showed improvement in taking the test series a second time. But there were 44 per cent more gainers in speed in the trained group than in the untrained, and nearly two thirds again as large a proportion of the trained group as of the untrained group gained in accuracy. Of the group that had the training not all gained, and of the group that did not have the training a very large number gained as much as those who had had it.

How many individuals gained?

In "Attempts" 67.8 per cent of the training group and 42.5 per cent of the control group gain in 60 per cent or more of the tests taken.

That is, 42½ folks out of every hundred who did not have the training took the tests as successfully as 68 out of every hundred who did have it. That is, the course seems to have been of some positive assistance in preparing only 25½ folks out of each hundred to take the test. To 32 out of every hundred who took it, it was no help, and 42½ of every hundred who took it got on just as well without it as with it, that is, so far as attempts went.

In "Rights" 72.7 per cent of the training group and 31 per cent of the control group gain in 60 per cent or more of the tests taken.

If 72.7 per cent who took the training gained, we may conclude that 27 out of every hundred who took it did not gain, and as 31 per cent of those who did not have it did as well as those who did have it, only 42 out of every hundred became more accurate because of it, while 58 did not; thus you see the chances seem to be about 6 to 4 against expecting anything in the way of general training, that is, training which is not strictly specific, from such a course. On Dr. Rugg's showing, the dice are loaded against every student who takes this course for general training.

It is true, as he points out, that more of those who took the training gained than of those who did not, but a considerable number of those who took it did not gain, and a very considerable number of those who did not take it gained. So to gain it is not necessary to take it, and if one does take it, there is no certainty that he will gain.

These are his figures, but this is not Dr. Rugg's conclusion. His conclusion is that these results supply confirmatory evidence of the "transfer of training"; though, as he says, his data do not, of course, establish conclusively the possibility of transfer. It is not the possibility of transfer but rather the actuality of transfer that concerns educators. His results, like those of all the experimental studies I have seen, seem to me to assist materially in establishing the fact that we can not any longer make a philosophy of education out of the doctrine of formal discipline, and they very positively confirm the suspicion with which any such attempt must be met. The burden of proof rests

upon those who uphold this theory. It has never been proven, and until it is proven, it is mere conjecture, wholly insufficient as a theory of instruction.

Education is too serious a business to be allowed to proceed upon chances which are mathematically known to be against the student. Some of those who have investigated the question whether training is transferred declare that it is not. Some affirm that under certain conditions it is sometimes and in some degree; but even when they declare that it is transferred, the evidence of transfer is so inconclusive, and the amount of the so-called transfer is so slight and the expectation of it so uncertain, that it is the part of wisdom no longer to build houses of learning upon the shifting sands of this doctrine. The investigations have put a cloud upon the title of this theory of education which can not be removed. It simply does not work. On the solid rock of specific education we can build and must build, for of the results of specific education we can be sure, but as for formal or general discipline, in the words of Professor Spearman:

> The great assumption upon which education has rested for so many centuries is now at last rendered amenable to experimental corroboration — and it proves to be false.

MATHEMATICS AND FORMAL DISCIPLINE AGAIN[1]

My thesis was not that experiences are not generalized; everybody knows they are sometimes and in some degree. My thesis was that you can not make a philosophy of education out of that. You can not make a philosophy of education out of the doctrine of formal discipline in any of its interpretations in its present highly unsatisfactory condition. What Mr. Moore says seems to me to support that contention. He objects to reading what Socrates, Plato, Aristotle, Descartes, or Pascal said about the teaching of mathematics as having any bearing upon present-day reasons for teaching that subject. It is usually regarded as proper to inquire into the history of a doctrine whenever its meaning or its sufficiency is in question. There is special reason for calling these particular men to testify as to the teaching of mathematics as formal discipline, for they are commonly regarded as the authors of that theory. To show that they were, in fact, opposed to it is to locate its origin in other and perhaps in less worthy quarters.

The manyness of the opinions cited in favor of mathematics as general discipline in Morwitz's

[1] A reply to "The Inadequacy of Arguments against Disciplinary Values" by Charles N. Moore, *School and Society*, Dec. 29, 1917.

"Memorabilia Mathematica" has little to do with the matter, though the quality and effect of their authors' reasoning may be worth considering.

I do not think Mr. Moore read far enough in Comte's "Positive Philosophy" to get Comte's point of view. I commend to him the chapter entitled "Final Estimate of the Positive Method," where he will find many statements about mathematics, among them these:

According to my theory, mathematics necessarily prevailed during the long training of the human mind to positivism; and sociology alone can guide genuine speculation when its basis is once fully ascertained. . . . We have seen throughout this work that mathematical science is the source of positivity; but we have also seen that mathematical conceptions are by their nature incapable of forming a genuine, complete and universal philosophy. . . . The fruitlessness of the notion is no evidence that it was given up by scientific men, who have still hoped, with every accession of discovery, to find their mathematical principle universally applicable at last; and the practical effect of their persuasion was simply to prejudice them against any other systematic conception, and even against any portion of natural philosophy which was too complex to be brought under mathematical management. . . . The comparative method proper to biology, and the historical method proper to sociology are the two greatest of logical creations achieved in the face of extreme scientific difficulties; but the disgraceful ignorance of almost all geometers of these two transcendent methods of logical investigations shows that it was not mathematics that furnished the conception, though some examples of them may be found in mathematical science, fruitless and unintelligible to all who have not derived them from their original source. So much for the logical estimate.

As for the scientific, the superiority of the sociological spirit is no less evident in regard to the universality required. Though the geometrical and mechanical point of view is universal, in as far

as that the laws of extension and motion operate in an elementary way upon all phenomena whatever, yet, however valuable may be the special indications thence arising, they can never even in the simplest cases obviate the necessity of a direct study of the subject; and that direct study must always be the preponderant one.

As to the study of mathematics having an effect when it is taken sparingly in youth that it does not have if persisted in in age, that is an assumption that has long puzzled me. I confess to inability to understand how a study which makes specialists of adults can have the opposite effect of making generalists of boys and girls. It seems to me it must have the same kind of effect upon both and that what we mean is that we want everybody to pursue the special lessons of mathematics up to a certain point and beyond that point they will not be useful for all just because they are special lessons. But that is to abandon the mystical value of mathematics altogether, which the fate which overtakes the adult specialist warns us to do.

Mr. Moore advises me to follow Professor Hancock's example and collect the opinions of "prominent lawyers, physicians, ministers and men of affairs," as to what the young of our day should study and why. Professor Snedden has already pointed out the insufficiency of that method. It seems to me to employ the doctrine of general discipline with a vengeance. How the opinions of these men upon the study of mathematics can be any better than their opinions upon dietetics, I do not quite see. Socrates, Plato, and Aristotle, at least,

spent their lives in thinking about education. There is no statute of limitations against their work.

Fully ninety per cent of the teachers whom I have met in schools and colleges and nearly one hundred per cent of the parents whom I have been privileged to know still believe that young people attend school in order that the faculties of their minds may be improved and perfected. It was folks of that kind I was addressing The "transferists" have done little to banish that superstition. It is time for them to publicly acknowledge that they are talking about something quite different. To say that the doctrine of formal discipline does not depend upon the faculty psychology is to use words contrary to general acceptation without defining them and thereby to perpetuate and foster an erroneous conception which should long since have been rooted from the popular mind. In spite of statements to the contrary there are some things we could conceivably do with faculties if we had them that we can not do with functions. If we still believed in faculties, we might insist — the thing is done sometimes — that training a soldier to shoot with a rifle trains him at the same time to shoot with a revolver, a trench mortar, a French 75, to dig trenches, throw hand grenades, use the bayonet, and cut barbed wire without making a noise. For is not his faculty of soldiering being trained? As long as we do not believe in faculties we are more modest in our expectations. We perhaps agree that no matter how well he shoots with a rifle he must nevertheless have specific lessons in the use of the bayonet, in throwing hand grenades, in

digging trenches, and in cutting wire. On the other hand, most of us perhaps would admit that there is something in common between shooting with a rifle and shooting with a cannon, a trench mortar or a revolver. These arts are in some sense one; but our government can not train its soldiers on that basis. It gives them lessons in the use of all the arms. Any one who cares to can conduct experiments to determine just what degree of knowledge is carried over from rifle-shooting to grenade-throwing or operating a big gun. The question is not without interest, but its answer will not materially change the specific training which the nation gives its soldiers.

Mr. Moore believes that the process of reasoning can be acquired apart from the data upon which it is to be used. Faculties or no faculties, that is the inveterate error of formal discipline, its separation of activities from the subject matter of their action. I can not do better than to quote Professor Dewey upon this fundamental fallacy:

> To talk about training a power, mental or physical, in general, apart from the subject matter involved in its exercise, is nonsense.

Mr. F. C. Lewis's results are, to be sure, not final. They are simple enumerations of facts as he found them. They can not, I think, be tortured into meaning anything but a challenge to the other side to prove its case. Mr. Moore declares that my error in regard to Dr. Rugg's experiments is in believing that we can obtain "very precise results by the use of data which are not themselves very precise."

That is exactly what I protested against the other side doing. If the results are not precise, how can they be more precise for the doctrine than against it? Dr. Rugg's summary of the results of the experimental studies thus far made seems to me to be admirable:

> The experimentation has not led to the acceptance of a belief in that widespread improvement that was expected by the old formal-disciplinists prior to the beginning of experimental work. The results so far place us still in a middle ground. "Transfer" is an accepted experimental fact, but as to the extent to which training transfers and the most favorable conditions for its transfer specialists are not always agreed. . . . Thus the studies indicate that the law of learning has to be made a conscious matter of ideation in order to insure any considerable amount of transferred improvement.

Our whole complaint against the doctrine of formal discipline is that it does not attempt to get results by conscious ideation. It expects them to grow where they have not been planted. If they grow in reliable quantity only from conscious ideation, the superstition that they come of themselves as happy by-products is banished, and the fight for specific instruction is won.

The difference between Dr. Rugg's "not yet proven," Dr. Coover's "proven," Mr. Moore's "proven beyond a question," Professor Spearman's and Dr. Sleight's "disproven," Professor Dearborn's "not proven," and the many other conflicting utterances of the experimentalists upon this doctrine have put a cloud upon its title, which no amount of special pleading can remove. When we attempt to

apply these highly discordant results in the selection of studies and ways of teaching, we can make nothing out of them. They are a counsel of confusion. Dr. Coover's summary of experimental results does not agree with Dr. Rugg's and does not seem to be entirely warranted by the experiments which he recounts. But let us take it as though it were: "Under experimental conditions the 'general' effect usually ranged in amount from one fourth to three fourths of the gain made in specific practice." Now what educational application can one make out of that? Is there anything in it which rehabilitates the doctrine of formal discipline? Does that tell us to study mathematics for formal disciplinary reasons or not? Does it indicate that mathematics is superior to science, history or literature in contributing "general effect"? How general is the "general effect" which the experiments show? Does the experimenter who has had the special training become better in all respects or only in his ability to repeat and reapply the special lesson which he has learned? He can do kindred work or perform related activities better, he is not trained generally, but very particularly still. The fact that "transfer" is explained by those who attempt to explain it as due to common elements, middle terms, identity in method, content or aim, indicates that what is transferred is the specific lesson or part of the specific lesson which has been learned. If that lesson is the carrier, it must be kept in the focus of attention. The general grows out of the specific, but the specific must be learned before there can be a general. There are other reasons for

emphasizing the preponderant importance of specific training. On Dr. Coover's own showing it always exceeds the "general effect" by from three-fourths to one-fourth. Now, since "general effect" is only slightly generalized specific effect, why not arrange to get the benefit of both together rather than reject the one to get the other? To make the general effect our object when we could have both is surely uneconomical.

The experiments do not show that one study is better than another in producing "general" effects. They offer as much comfort to one study as another. In this respect they do not establish the doctrine of disciplinary studies. They break it down.

Professor Spearman and Dr. Sleight can not be read out of court so cavalierly. As for the burden of proof it is still where it always has been — on the side making an assertion. The contention that particular studies have special and greatly to be preferred formal disciplinary effects has not been proven.

Since it is well to go to the experts for reasons for studying a subject, I should like to repeat two very important statements made since the beginning of the war by mathematicians. "In speaking of the significance of mathematics," says the retiring president of the Mathematical Association of America, Professor E. N. Hendrick, "I understand that we mean not at all the baser material advantage to the individual student, not at all a narrow utilitarianism, but rather a comprehensive grasp of the usefulness of mathematics to society as a whole, to science, to engineering, to the nation. Any narrower

view would be unworthy of us; any narrower demand by educators means a degraded view of the purposes of education in a democracy." And the other from the presidential address to the Mathematical Association of Great Britain, January, 1916, by Professor A. N. Whitehead: "But what is the point of teaching a child to solve a quadratic equation? There is a traditional answer to this question. It runs thus: The mind is an instrument, you first sharpen it and then use it. The acquisition of the power of solving a quadratic equation is part of the process of sharpening the mind. Now there is just enough truth in this answer to have made it live through the ages. But for all its half truth it embodies a radical error which bids fair to stifle the genius of the modern world. . . . Whoever was the originator, there can be no doubt of the authority which it has acquired by the continuous approval which it has received from eminent persons. But whatever its weight of authority, whatever the high approval which it can quote, I have no hesitation in denouncing it as one of the most fatal, erroneous and dangerous conceptions ever introduced into education."

DOES THE STUDY OF MATHEMATICS TRAIN THE MIND SPECIFICALLY OR UNIVERSALLY? A REPLY TO A REPLY [1]

My discussion was what it professed to be, not a treatise, not an encyclopedic article, not even an attempt to sum up both sides of a vast controversy, but an effort to state in forty minutes the point of view that the study of mathematics is specific to a company, The Association of Teachers of Mathematics in New England, almost all of whom were well indoctrinated upholders of the contrary theory. I put into my argument what seemed to me to be pertinent to the subject and the occasion. Professor Moritz would doubtless have treated the subject quite differently, but he must not arraign me because I do not attach to the arguments and citations which he would have used the value he attaches to them. I shall attempt to meet his points in the order in which he makes them.

That education is, or at least aims to be, a conscious process and a purposive undertaking, he seems to doubt, though I am not clear as to what alternative is in his mind. To my contention that studying a subject because we believe that we owe it to that

[1] Robert E. Moritz, "Does the Study of Mathematics Train the Mind Specifically or Universally? A Reply," *School and Society*, April 27, 1918.

subject to pay it that debt of honor, reverence, obeisance, or worship is a form of idolatry which annually entails a heavy sacrifice of young lives, he replies that "the only educator who is on record for having sacrificed a whole hecatomb of lives is Pythagoras. . . ." The taking of lives in the name of subjects is not uncommon, though those who do it do not allow it to be recorded. To the statement that science for the sake of science, literature for the sake of literature, knowledge for the sake of knowledge and art for art's sake are peculiarly inhuman beliefs he enters a vehement protest. I think that is due to a seeming rather than a real difference in fundamental philosophy; though I am not sure, for in these days when millions offer themselves as sacrifices to that supermetaphysical state which does not even claim to exist for their or any man's good, but rather that they exist for it, it is possible that some men still believe that knowledge, art, science, literature, philosophy and mathematics do not exist for man's sake but like that state for their own. If any one will take the trouble to think the matter through, he will not stop in that belief. Unfortunately for Professor Moritz's argument, the illustrations which he offers to support it refute it. You can not prove that knowledge exists for its own sake by showing that it has ultimately been used. That makes it instrumental. In the New Testament the believers are promised a knowledge of the truth "and the truth shall make you free." That is its function. If it does not make itself indispensable by serving in some capacity, it is certain to be neglected

and forgotten as so many so-called discoveries, revelations and systems of knowledge have been, for the law of survival weeds out mental products just as it weeds out organisms.

But Professor Moritz's meaning may be that though knowledge does not exist for the sake of knowledge, the investigator in order to give himself unreservedly to investigation must act somewhat in that spirit. That, I think, is sound. Though the sole purpose of knowledge is to minister to human need, investigation must run ahead of human need and lay up a stock of knowledge in anticipation of society's future requirements. If the investigator attempts too exactly to determine the utility of his discovery before he has made it, he will desert his function of investigating to busy himself with passing a final judgment upon the value of the facts which he proposes to examine, which is the function of society and one which it can perform only when he has done his work of putting the facts which he has discovered at its command. It enjoins him to go forth and make discovery as though discovery was an end in itself, well knowing that what he does is only half the story, for it reserves to itself the right to pass upon the value of all that he offers it and to reject whatever parts of his contribution do not in some way serve it. That is, its command to him to extend the boundaries of knowledge for the sake of knowledge is methodological, and not at all a final philosophy.

But is that principle of method to be applied in schools where what is attempted is the quite different

task of bringing the consciousness of the young to an appreciation of the discoveries which the race has made and whose value it has proven by its need? Surely the lessons which are taught must not be lessons for the sake of lessons, and if we are at all serious, they will be carefully chosen because of their unmistakable value. We may quarrel about what is valuable, but how can we possibly differ about it being value, and nothing but value, that we seek for them?

As to there being "only three purposes, if there were more the writer would have discovered them," I think Professor Moritz credits me with less humility than I try to bring to the discussion of these matters.

This proposition that the mind needs no improving, that in fact it can not be improved, is so obvious to the writer that he considers any discussion of it a mere waste of time.

I fear I have not made my meaning plain. There is a room in the Harvard Club in Boston which is set apart for the use of graduates of the medical school, and over the fireplace in that room is an inscription which sums up in a sentence the philosophy of the medical profession. It reads:

We dress the wound, God heals it.

If the physician can not heal wounds, can the teacher make over minds, repair them, add cubits to their stature, build additions to them, sharpen them, improve them, perfect them? We may say that he is engaged in doing that, just as we sometimes say that the gardener makes the plant grow, but if

we are trying to think exactly, and to speak exactly, we will not say that or think that. As for perfecting the faculties of the mind, it is plain that if there are no faculties, they can not be perfected.

Professor Moritz has it that I "promised to point out that there have been almost or quite as many competent critics of this doctrine as upholders of it," and that as a matter of fact I do neither, citing but one authority for it; namely, Professor C. J. Keyser, and "almost or quite as many"; namely, Sir William Hamilton, as opposing it. Promised is not the word; stated or pointed out, in the sense of calling attention to the fact, is. My critic's method of counting, by which Socrates, Plato, Aristotle, d'Alembert, Descartes and Blaise Pascal become "*one authority* . . . namely, Sir William Hamilton," is, to say the least, confusing. To my non-mathematical mind these names represented several important thinkers with not a little knowledge of mathematics and some ability to tell about its rightful claims. I fear I have not sufficiently "observed the unit." I can, however, assure him that when Professor Keyser declared that Sir William Hamilton distorted "the express and unmistakable meaning" of d'Alembert, Blaise Pascal and Descartes, "even to the extent of complete inversion," Hamilton did not misquote their words in these passages. If they did not say what they meant, that statement may be true, but if they were able to put their thoughts into language, that statement needs revision. Why is it that Sir William Hamilton's paper causes such spasmodic wrigglings in certain quarters even to-day?

He even fails to detect the fine irony contained in Professor Young's remark.

The remark referred to is the second statement in the following quotation. Let the reader detect the irony if he can.

The reading of his paper (Sir William Hamilton's) is instructive to the teacher of mathematics, as are all thoughtful judgments of the subject or any of its phases, from those who look at it from a different viewpoint. It is a pity more such criticisms are not made. Carefully studied, Sir William Hamilton's paper shows that much progress has been made in the pedagogy of mathematics since his time, and should serve to spur on or to encourage the teacher in his efforts often enough quite arduous, to keep the pupil at work evolving his own mathematics.[1]

"It seems incredible," says Professor Moritz, "that any writer who values his reputation should play up arguments published over eighty years ago, and which were answered in detail by one of the world's greatest thinkers, without even making mention of that fact." Ah! but were they answered in detail? Instead of destroying Hamilton's case did not Mill indeed proceed to make a stronger case than Hamilton had made? Every pragmatist is profoundly indebted to John Stuart Mill for light and leading in the very fundamentals of belief. The twenty-seventh chapter of his "Examination of Sir William Hamilton's Philosophy" is particularly dear to them, but not for the reasons for which Professor Moritz values it. Indeed, as a reply to Sir William Hamilton, it is singularly dogmatic and ineffective. Its great author does not seem at all times to know just what Hamilton really says, and in the end he

[1] Young, "The Teaching of Mathematics," p. 39.

out-Hamiltons Hamilton in his distrust of mathematics. His point that Hamilton was no mathematician and therefore not qualified to discuss the question would be more telling if the question were a mathematical one.

What does Mill really claim for the study of mathematics? To Hamilton's contention that mathematics "does not teach us either by theory or practice to estimate probabilities," his reply is:

> Did any mathematician or eulogist of mathematics ever pretend that it did?
>
> Inasmuch as abstract science in general and mathematics in particular afford no practice in the estimation of conflicting probabilities, which is the kind of sagacity most required in the conduct of practical affairs, it follows that when made so exclusive an occupation as to prevent the mind from obtaining enough of this necessary practice in other ways, it does worse than not cultivate the faculty — it prevents it from being acquired, and *pro tanto* unfits the person for the general business of life.

If Mill is to be our authority, that passage alone, if followed, would free many, perhaps most, high-school pupils from the burden of present-day mathematical requirements. But Mill is more confident, perhaps too confident, that the subject has other values.

> Let us be assured that for the formation of a well-trained intellect it is no slight recommendation of a study that it is the means by which the mind is earliest and most easily brought to maintain within itself a standard of complete proof.

But those students of whom Herbert Spencer doubted "if one boy in five hundred ever heard the explanation of a rule of arithmetic or knows his Euclid otherwise than by rote" did not acquire from

their study a standard of complete proof; that result does not come as a by-product of studying algebra or geometry for a certain time. Not the mere manipulation of algebraic and geometrical facts and processes, but specific lessons which have for their purpose the development of the notion of what mathematical proof is and what its demands and requirements are, will if they are successful, train the mind to familiarity with such standards. Only the teacher who believes in miracles will hope to reap such results where he has not sown. And inasmuch as proof is one thing in geometry and a very different thing in history or science or ethics, both the teacher and the student must remember that it is not a standard of proof but a standard of mathematical proof which they are elaborating. Mill himself shall prove that in a moment.

Another claim for mathematical studies which Mill makes is that they habituate the student to precision. To precision in all things or to precision in mathematics? Any one who has spent his life in dealing with students knows that precision is a rare trait both before and after they have taken mathematics courses. There is no denying that that ideal may be developed in the mathematics class and required there and may even be generalized to reach out and apply to operations other than those which are performed there, but it is only the teacher who consciously teaches that lesson who is likely to establish that ideal. Instruction in it, too, must be specific or it will not betray its existence very commonly even in the mathematics classroom.

Neither is it a small advantage of mathematical studies, even in their poorest and most meager form, that they at least habituate the mind to resolve a train of reasoning into steps and make sure of each step before advancing to another.

Here again Mill is talking of what mathematics when taught in a certain purposive way may accomplish rather than what mere consorting with the subject does accomplish for the student. It is not the subject but a certain specific attack upon the subject which will bring results of that nature. The problem method, for example, has been employed for centuries in the teaching and studying of mathematics but it has not been applied to other subjects until very recently, though it could have been applied most profitably to them. Our contention is that these lessons are not by-products of the ordinary teaching of mathematics, but when they are consequences of that subject, it is because they have been consciously made to take their places as essential parts of the content which is taught and studied in that subject.

Since Professor Moritz has appealed to Mill, to Mill he must go, though he will regret having called upon him for judgment when he finds out what his judgment is. Thus far his champion, though rather inconclusive, has stood beside him; but now their ways part completely, for Mill declares that Sir William Hamilton has indeed made

a far less powerful attack upon the tendencies of mathematical studies than could easily be made by one who understood the subject. He has in fact missed the most considerable of the evil effects to the production of which those studies have con-

tributed; and has thrown no light on the intellectual shortcomings of the common run of mathematicians so singularly displayed in their wretched treatment of the generalities of their own science. . . .

"The one really grave charge which rests on the mathematical spirit," according to Mill, is that

it leads men to place their ideal of Science in deriving all knowledge from a small number of axiomatic premises, accepted as self-evident and taken for immediate intuitions of reason. This is what Descartes attempted to do and inculcated as the thing to be done; and as he shares with only one other name the honor of having given his impress to the whole character of the modern speculative movement, the consequences of his error have been most calamitous. . . . All reflecting persons in England and many in France perceive that the chief infirmities of French thinking arise from its geometrical spirit. . . . If this be the case even in France, it is still worse in Germany, the whole of whose speculative philosophy is an emanation from Descartes, and to most of whose thinkers the Baconian point of view is still below the horizon. Through Spinoza, who gave to his system the very forms as well as the entire spirit of geometry; through the mathematician Leibnitz, who reigned supreme over the German speculative mind for above a generation; with its spirit temporarily modified by the powerful intellectual individuality of Kant, but flying back after him to its uncorrected tendencies, the geometrical spirit went on from bad to worse, until in Schelling and Hegel the laws even of physical nature were deduced by ratiocination from subjective deliverances of the mind. The whole of German philosophical speculation has run from the beginning in this wrong groove, and having only recently become aware of the fact is at present making convulsive efforts to get out of it. All these mistakes and this deplorable waste of time and intellectual power by some of the most gifted and cultivated portions of the human race are effects of the too unqualified predominance of the mental habits and tendencies engendered by elementary mathematics.

If Mill had this to say at that time for the mental habits and tendencies engendered by elementary mathematics, what would he have said had he written that passage to-day in the midst of the full flowering of German philosophical ideas? Mathematics sets up a standard of proof, but in the minds in which it does that the effect is reprehensible. Mathematics habituates the student to precision, but if he seeks mathematical precision in non-mathematical fields, see what a mess he makes of it. Mathematics habituates the mind to resolve a train of reasoning into steps and make sure of each step before it advances to another, but the reasoning must be mathematical before the mathematical linkage will apply. The net result is that mathematical ideals and processes apply to mathematics and its immediate applications. Now if these notions in their unrestricted form are harmful in men, would they not be equally harmful in young men and in children if they indeed got them from their study of that subject? So we must add to our contention that they do not get such general ideas, but only specific ideas narrowly applied, the further conviction that it would be harmful if they did.

I have spent many years upon Plato and nowhere do I find him upholding the by-product theory of education. He is far too good a thinker to do that. His whole emphasis from the good musician to the good guardian is that specific training alone will accomplish the result which is wanted. When he says that arithmetic makes one quicker he means merely that one who studies it as Plato intended

gets a new notion of intelligence as a successful problem solver, a notion which makes him attack recognizedly similar problems more vigorously. Let me quote again his own words, which Professor Moritz, distracted by his statement "I have hardly ever known a mathematician who could reason," failed to read.

When there is some contradiction always present and one is the reverse of one and involves the conception of plurality, then thought begins to be aroused within us and the soul, perplexed and wanting to arrive at a decision, asks: "What is unity itself?" This is the way in which the study of the one has a power of drawing and converting the mind to the contemplation of true being.

As true being is intelligence, the claim which is made is that these studies when rightly used lead to self-discovery. There is not the slightest need to quarrel about his theory of education, for Plato himself has stated that it was specific in a most luminous and definite passage which reads:

According to my view any one who would be good at anything must practice that thing from his youth upward both in sport and in earnest in its several branches; for example, he who is to be a good builder, should play at building children's houses; he who is to be a good husbandman, at tilling the ground; and those who have the care of their education should provide them when young with mimic tools. They should learn beforehand the knowledge which they will afterwards require for their art. For example, the future carpenter should learn to measure or apply the line in play; and the future warrior should learn riding or some other exercise, for amusement, and the teacher should endeavor to direct the children's inclinations and pleasures by the help of amusements to their final aim in life. The most important part of education is right training in the nursery. The soul of the

child in his play should be guided to the love of that sort of excellence in which when he grows up to manhood he will have to be perfected. Do you agree with me thus far?

"Certainly."

Then let us not leave the meaning of education ambiguous or ill defined. At present when we speak in terms of praise or blame about the bringing-up of each person, we call one man educated and another uneducated, although the uneducated man may be sometimes very well educated for the calling of a retail trader, or of a captain of a ship and the like. For we are not speaking of education in this narrower sense, but of that other education in virtue from youth upwards, which makes a man eagerly pursue the ideal perfection of citizenship, and teaches him how rightly to rule and how to obey. This is the only education which, upon our view, deserves the name; that other sort of training which aims at the acquisition of wealth or bodily strength or mere cleverness apart from intelligence and justice is mean and illiberal and is not worthy to be called education at all. But let us not quarrel with one another about a word, provided that the proposition which has just been granted hold good: to wit, that those who are rightly educated become good men. Neither must we cast a slur upon education, which is the first and fairest thing that the best of men can ever have, and which, though liable to take a wrong direction, is capable of reformation, and this work of reformation is the great business of every man while he lives.[1]

As to Comte, I am unable to find a single passage which supports the by-product theory. My critic shall have all the comfort he can get from the long list of extracts he cites. To me the one thing which they state is that if one studies mathematics to good purpose, he will be able to use mathematics in the various applications of it which he masters. If Professor Moritz will take the trouble to read on

[1] "Laws," 643–44.

until he comes to Comte's chapter entitled "Final Estimate of the Positive Method," he will find much that does not agree with his interpretation. "Though the geometrical and mechanical point of view is universal . . . they can never, even in the simplest cases, obviate the necessity of a direct study of the subject; and that direct study must always be the preponderant one." Does Comte then believe that mathematics is a preferred study, or that it is only one among many? Does he believe in specific or in that vague thing called "general training?"

It is certain that astronomical, like physical discovery, has been much impeded by the intrusion of the geometers, who do not perceive in the one case any more than in the other, that the pursuit of any science is the work of students who understand the special destination of the instrument, logical or material, as well as its structure.

The only really universal point of view is the human, or, speaking exactly, the social.

The mathematicians may be incapable of estimating social researches, but sociologists are free from their blindness, and can never possibly underrate mathematical labors.

A few years spent in pursuing one kind of studies, so simple as to be accessible to average ability, are the mathematical qualification; but the result has been, in the most triumphant days of mathematical ambition, a supremacy more apparent than real, and wholly destitute amidst all its pretensions to scientific universality, of the practical reality which belongs to sociological ascendancy.

The comparative method proper to biology, and the historical method proper to sociology are the two greatest logical creations, achieved in the face of extreme scientific difficulties: but the disgraceful ignorance of almost all geometers of these two transcendent methods of logical investigation shows that it was not mathematics that furnished the conception. . . .

As to the experiments which have been made and particularly as to those of them to which I referred, I think my critic goes much too fast also. He professes deep solicitude for the impartial weighing of scientific evidence, and in that I share, but one must carry out his pretensions. There is much magic in such a phrase as "the coefficient of correlation" and he uses it to the full. "Does not the writer know," he asks, "that Lewis's tests have been repeatedly discredited by other writers?" Such as they are they have not been discredited. What "the other writers" to whom he refers have done has been to take Lewis's data and to calculate coefficients of correlation for them. That translates his results into other language but does not change the results in the slightest. Lewis did not phrase them in that language, he simply described them. Their formula contains exactly what his description contained, but by their formula they imply a causative relation between one study and another, whereas in this case no such causative relation is either shown or implied by their coefficient of correlation, for no measurement was made at the beginning of the test and there is no proof whatever that the marks had any such causative relation to each other. If my critic means that Lewis's test is far from proving anything save that a large number of students who are good in mathematics are poor in law and vice versa, that is correct, but that is all I offered them as illustrating.

For the thoroughness of Professor Rugg's study I have nothing but praise. As to the bearing of his results upon educational practice he is by no means so

dogmatic as Professor Moritz is. This is the final paragraph in his book:[1]

> The possibility of one disciplinary outcome in a specific school subject, *i.e.*, ability in the mental manipulation of spatial elements, has been established in this investigation. The writer believes that formal school subjects find a large part of their disciplinary value in the developing of this ability to analyze the problem and to organize a method of procedure; to build up ideals, or to organize a method of attack. But it is undoubted that they also make habitual, or automatic, many specific constituents of the complex abilities that function in many complex situations. The successful habitualizing of these specific reactions is accentuated by the building up of a background of fundamental attitudes of orientation, or familiarity with the content of the situations to be met. It may be increased by the accompaniment of practice in extending the range of attention.

Is this ability to analyze the problem and to organize a method of procedure general or specific? In the nature of the case, method must be specific to the matter to which it applies. It may be applicable far beyond the limits of "the specific school subject" in connection with which it is taught, but it can not be unlimited unless it be too abstract to connect up with any subject matter in particular. The "specific constituents" of the complex abilities which they — the so-called disciplinary studies — make habitual were, it will be noted, specific constituents. That is, certain specific methods, ideals and habits were learned and were applied beyond the particular subject matter in connection with which they were expressly taught. In another connection Professor Rugg asks:

[1] "The Experimental Determination of Mental Discipline in School Studies," by H. O. Rugg; Warwick & York, 1916.

But having satisfied ourselves that the effect of training did spread to abilities not specifically trained by the training series [I think he means by "abilities" here, not procedures or acts, but their application to a new subject matter] can we go further and offer any definite information as to the exact range of this spread of improvement? Can we say, for example, that with the average student the training carried over one-half or four-tenths as efficiently into quasi-geometrical fields as it did into fields dealing with strictly geometrical elements? Or that it carried over one-third or one-fourth as efficiently with non-geometrical elements as with strictly geometrical elements? Obviously we can not. In order to do so we should require a definite measure of the adequacy of each test as a measure of the specific abilities tested. . . . To know that, however, would require the solution of a problem in the design of mental tests, and in the calibration of mental tests, which in itself would be very formidable and one whose solution has not been deemed possible as a preliminary step in the conduct of this study.

Here again Professor Moritz employs the charm of the coefficient of correlation to produce the state of mind which he desires.

For mathematics and descriptive geometry it was found to be 0.70; for mathematics and foreign languages 0.50; for mathematics and English 0.40. . . . Now, as is well known, correlation coefficients ranging above 0.40 indicate a high degree of correlation and create a strong presumption in favor of some causal relation between the efficiencies compared.

Professor Rugg, following Rietz, to whom Moritz appeals, puts it differently:

The author's practice is to regard correlation as "negligible" or "indifferent" when r is less than .15 or .20; as being present, but "low" when r is .15 or .20 to .35 or .40; as being "marked" from .40 to .50 or .60; and as being "high" with values of r above .50 or .60.

That, I suppose, is a minor difference, but a mathematician should be exact.

Now while the absence of correlation proves the absence of "transfer," the presence of even a "high" correlation does not prove that it was due to transfer; while it creates a presumption, the burden of proving that it was due to transfer rests upon those who make the contention. To make their case they must establish the fact that they have employed a definite measure of the adequacy of each test, which is exactly what Professor Rugg says has not been done. The nature of the lessons given must be examined to find out whether their effects were specific or general. Again, if only a high degree of correlation establishes a strong presumption in favor of some causal relation between the efficiencies compared, that presumption is established only in the case of mathematics and descriptive geometry, but not in the case of mathematics and foreign languages or in the case of mathematics and English.

Let that be as it may. There are many other experimental studies which I did not attempt to report, choosing these merely because they had to do with mathematics. Taken together or distributively they seem to assist materially in establishing the fact that we can not any longer choose studies or put our confidence in studies or require students to take studies on the ground of their formal disciplinary value. The tests one and all confirm that; something is transferred sometimes and in some degree, but it is too meager and uncertain to warrant any one in pursuing the subject for its sake alone. The

question of the existence of "transfer" and the amount of the "transfer" has thus become a question for mathematical psychology. In its present form it has no bearing on educational procedure. Why? Because the tests themselves show quite conclusively, since the coefficient of correlation in one case is .70 between mathematics and descriptive geometry and .50 between mathematics and foreign languages and only .40 between mathematics and English, and in every case takes that varying form, that what we are dealing with is not general powers which should, if they were general, operate in the same general way without regard to differences in subject matter, but specific effects of training which have no constant value but are applicable to the contexts to which they belong, but not beyond them.

Even if all the experiments should with one voice show a uniform coefficient of correlation of .90 between mathematics and every other study in the curriculum, not until it is clearly proven that the study of mathematics is the only study which produces that result can it claim the by-product value which would warrant us in teaching it as formal discipline while the others were taught only for their specific utilities. Perhaps they, too, through their representative character affect our work in matters which are not mentioned in the textbooks. If they do not, we had better stop teaching them.

Not until the study of mathematics can show a correlation coefficient of 1 with other studies can that study claim the time and the energy which we need for those other studies on the score that pursuit

of it is proxy for pursuit of them. If one has need for mathematics, and most do, he must study the mathematics which he needs. But if he has need for French shall he, for the sake of its formal discipline, take a course in mathematics which he does not need because the coefficient of correlation between mathematics and foreign languages has been found to be .50, or shall he take a course in French? Assume that my situation is such that I want to, and must, master Arabic, but have no specific need for Hebrew. Assume further that the coefficient of correlation between Hebrew and Arabic has been found to be .70. Shall I spend my time on the Hebrew that I do not need or shall I attack the Arabic at once? That is the question. If I attack it at once, I may be able to master as much Arabic as Hebrew in the time that I should be compelled to devote to Hebrew. Is it not the same with other studies? There are a number of them that we need and need desperately and have all too little time for. Shall we not devote ourselves to them?

Professor Moritz agrees that mathematics does not train the mind *universally;* from him that is a large concession. He holds that it does more than train the mind specifically and is eager to know how much more than that it does. That, he says, is an open question. But does he propose to go on forcing students to take mathematics for its formal disciplinary effects until that question is answered, or is he willing to declare a holiday in which he shall no more make that poor, weak and broken doctrine do any labor or perform any work until such time as it

may escape from the physicians and surgeons who are engaged in diagnosing its condition, and be restored to us with the necessary amputations made? I suspect that he will, like Germany, go on arming, though it is better to give up a procedure whose issue is so uncertain for a workable expectation whose outcome is assured.

There is another way. It emphasizes directness and definiteness of attack. The eminent jurist who has just published "The Voice of Lincoln" [1] writes:

> During the past year's study of Lincoln I have improved my efficiency in handling a legal question or a governmental problem more than one hundred per cent by following the Lincoln method. This method he gives us in his own words. It is the most important declaration to my mind (though only an interview) that Lincoln ever made that can be used by the American student.
>
> First. To hunt for an idea until I caught it.
>
> Second. To repeat it over and over again.
>
> Third. To put it into language plain enough for any boy I knew to comprehend.
>
> Fourth. Bound it on the north, bound it on the south, bound it on the east, bound it on the west.
>
> As we put the Kaiser out of our schools, I am in favor of putting Lincoln in.

That is specific education. It is hunting for something that one wants to find. That something must be a definite something, not a target of such low visibility as a general effect, before it can be hunted for. Its object, as Plato has phrased it for all time, is teaching the young the knowledge which they will afterward require for their art. As to

[1] "The Voice of Lincoln," by P. M. Wanamaker, Scribner's, New York.

how that knowledge can best be developed, the world has been making a colossal experiment in the last three years, and it finds that quick, purposive, and intensive training will produce the trained trench fighter, the trained artillery man, the trained flying man, the trained mechanic, the trained instructor or the trained officer within a period of from three to nine months. These results are obtained through specific education. Every one knows the objective. The officers tell the men that in their work there are no military secrets. Whenever lessons are set or movements are undertaken, the men are let into the plan and from the beginning know what it is they are trying to do as well as their leaders. Each one is led by his own intelligence. Every undertaking is a target which he first sees and then aims at. Of course, he can accomplish something then.

The heaviest count against the doctrine of formal discipline is that it makes such an intelligent proceeding impossible, it does not employ the psychology of attention, it substitutes obscurantism for clearly conceived purposes, it counsels blindness and relies upon indefinite application to produce results. Never again can it function as a philosophy of education in a world which has learned to see and then to attack, to first take aim and then to shoot, and to work by clearly understood objectives in all that it undertakes.

Of the doctrine that the mind is an instrument which must be sharpened before it is used and that mathematics is the grindstone upon which to sharpen it, the eminent British mathematician, Professor

A. N. Whitehead, declares that there is just enough truth in it to have made it live through the ages.

> But for all its half truth it embodies a radical error which bids fair to stifle the genius of the modern world. . . . Whoever was the originator, there can be no doubt of the authority which it has acquired by the continuous approval which it has received from eminent persons. But whatever its weight of authority, whatever the high approval which it can quote, I have no hesitation in denouncing it as one of the most fatal, erroneous and dangerous conceptions ever introduced into education.

That qualification of the doctrine of formal discipline is sound, for the presence of that doctrine in the mind of the teacher robs the lesson of the purposiveness and energy of specific endeavor. It takes away definiteness of striving and reduces expectation to a vague confidence that somehow the result will come no matter what is done nor how. It substitutes a superstitious routine for direct attack and leaves the student wearied, confused, disheartened, making of education a treadmill instead of an inspiration, a destroyer of, instead of a minister to, souls.

FORMAL DISCIPLINE AND THE TEACHING OF LITERATURE [1]

MATTHEW ARNOLD speaks of having for more than twenty years gotten his living by inspecting schools for the people and of having seen as he went in and out of them that "the power of letters never reaches them at all." Yet he never lost the conviction that "to know the best that has been thought and said in the world" is the chief duty of man. For such a knowledge, system in our reading is necessary, he declared. Without system reading is idling.

> Culture implies reading, but reading with a purpose to guide it and with system. He does a good work who does anything to help this; indeed it is the one essential service now to be rendered to education.

Year by year the conviction grows that the thing which makes a given form of activity educative and distinguishes it from acts which pass by that name, but which are not in the slightest degree helpful, is its purpose. Without purpose clearly conceived and definitely apprehended teaching and learning are both impossible. Unless one shoots at a target he does not really learn to shoot but is engaged instead merely in making a noise with the gun. In recent days we have been learning to look upon the difficulties

[1] An address before the New England Association of Teachers of English, Boston, March 17, 1917.

which young people have in getting an education and their remarkable lack of interest in either the whole or in certain parts of that process, and the aimless dreaminess which they show and the stupidity which they exhibit as due to our habit of setting up targets of low visibility for them rather than to any lack of mental energy or moral vigor on their part. We begin to see quite clearly that in so far as we have failed to invite them to keenly purposeful activity, we have been guilty of habituating them to slothful indifference, purposeless work, aimless achieving and disorganizing and spiritless effort. Under such tuition they do not learn to use their minds but rather to misuse them. The effort to make education purposeful is therefore nothing short of an attempt to save souls. It seeks to substitute for the letter which deadens, the spirit which augments life. It opposes to routinary lessons whose objective no one comprehends, lessons whose aim is so specific that every student will feel the challenge to show his ability and perfect his skill in them. Such teaching will not turn out washed-out, confused and inarticulate-minded graduates. Instead it will say to the student from his first day to his last in school: "You are here to learn to do certain things which the race has found that it can not live without doing. Every lesson has a specific aim, which you are first to see and then if possible to accomplish. The question for you at all stages of your course is, Can you do these socially necessary things?" Such a reconstruction of our purposes as will permit the student to become a conscious developer of indispensable skill

in the several human arts which are the basic tools of life nowadays is the reform which is now on foot in education.

There are many kinds of warrant for this effort. Ours is the scientific age and scientific method has approved itself as perhaps the most valuable tool which the race possesses. Science is not aimless groping. Its first step is not the accumulating of facts. Francis Bacon said it was, but none of the great discoverers has been able to work that way. The scientist begins with a problem, his finding is due to a purpose. Learning for him is not the accumulation of facts but the purposeful accumulation of facts.

There is a very significant passage in the last written utterance of Professor Münsterberg. It reads:

> When the telegram of the *Fatherland* arrived, asking for a holiday greeting as a contribution to the Christmas number, I was sitting in my psychological laboratory with a group of students engaged in a complicated psychological research. We were just experimenting on some subtle functions of the human memory, studying the conditions under which man remembers and forgets. Some of the results were very queer. We found that the mind does not lose its memory ideas in a mechanical way, but that everything depends upon purposes; ideas which are gathered with a certain aim quickly fade away when the motive is no longer effective.

Psychologists tell us that a problem or purpose persists in its influence, directing and systematizing our mental behavior for a long time. By its aid we see what would otherwise pass unnoted, associative tendencies are aroused and "the sentiment of the end" leads to logical thought. There is in all

working to attain purposes a far keener consciousness of the self than in less definite labor, an "I really will" state rather than an "I will" condition of mind being set up by the challenge of the problem.[1]

The whole modern movement for efficiency may be regarded as an effort to define the task which the worker seeks to perform. That, at any rate, is the first step in its better performance. When we know quite clearly what is to be done, the means of doing it will disclose themselves much more unequivocally than when we have only a vague notion of what it is we are undertaking.

All this applies just as directly to studying as it does to carrying pig iron. To be effective it must be definitely purposeful, it must call forth the activity of the student by offering a definite problem to be worked out by his searching, selecting and interpreting. It must tax his ability to organize its matter and allow him opportunities to perform on his own responsibility the several acts upon the subject which occupies him that the race finds it necessary to perform when it uses that subject. When he learns to swim, he must do so by swimming. When he studies carpentry, he must do the things which a carpenter does. When he studies chemistry, he must perform the processes which a chemist employs. When he studies geology, he must himself geologize. When he pursues psychology, his purpose and method must be to psychologize, and when he studies literature, his sole aim is to learn to use it.

[1] See the Chapter on The Problem or Purpose in "Movement and Mental Imagery," by Margaret Floy Washburn, Houghton Mifflin Co.

This point of view that we pursue studies for their definite and clearly comprehended utilities, requires us to abandon at least two other attitudes toward them. It seeks to abolish the distinction which Aristotle made between theoretical and practical knowledge, when he divided knowing into two kinds — knowing for the sake of knowing — that is knowing wholly unmixed with volition — and knowing for the sake of doing. Knowing for the sake of knowing is the disinterested contemplation of that which is for no other reason than simply to know it. Knowing for the sake of doing has for its object a human interference with the course of events, controlling the environment by reacting to it in ways serviceable to ourselves, making things come our way or if not that, anticipating their way and keeping out of their path when they menace us. Such a separation of intellect from volition as Aristotle made in distinguishing these two kinds of knowing finds little to support it in modern psychology. The nervous system is an action system rather than a device for the production of knowledge. The sensory nerves run into motor nerves; the brain is a switchboard whose function it is to make appropriate connections.

Perhaps no justification of literature is commoner than that it exists for its own sake. We are told over and over again that we must study it just because it is literature just as we are told that we must study science for the sake of science, art for the sake of art, knowledge for the sake of knowledge. I have heard these statements and their several variants as often as one is apt to who spends his

days in college work, but I confess that no single glimmer of their meaning has ever been vouchsafed to me. I am utterly at a loss to understand why they have such a consolatory effect upon so many otherwise intelligent people. Science, literature and every other form of knowledge is man-made. We are forbidden to worship the creations of man's hands, for that is idolatry. Are not prostrations before the creations of his mind just as harmful? The practice of setting up images of wood and stone and of bowing down before them has ceased almost everywhere, but the practice of hypostatizing ideas and worshiping them has not ceased, but is even to-day far more destructive of human life, it would seem, than all the other forms of idolatry that ever existed, for the German worship of that hyper-metaphysical entity, the self-existing state, is, as you know, a religion which calls for much human sacrifice. To hypostatize science or literature may not be as bloody a business, but it is very destructive of young lives. I am satisfied that the man who says that literature exists for its own sake has not taken the trouble to puzzle himself as to what that phrase may mean. He relies on words where he ought to employ thoughts, and students whom I know seem to have as much difficulty in working themselves into the state of devotion which this formula demands as I have. One very grave difficulty with literature worship is that it is polytheistic and its gods, like those of ancient Rome, are more numerous than their worshipers, so that a truly devout member of its cult must be unceasingly engaged in making prostrations and doing

reverence or he will fail in his duty. I think you will agree with me that something very like a liturgical familiarity with authors and their works is prescribed in certain quarters. I went into a classroom a few days ago and was there just long enough to hear the question, What striking differences are there between "The Essay on Man" and "The Essay on Criticism"? addressed to a class of young people whose members had read neither of those productions.

It is, I believe, a far more wholesome view and altogether more helpful to the young that literature and art and science and every other form of knowledge exist for man's sake and came into being for no other reason than to serve him. When we take that view, we become able to select that which is helpful from that which is less helpful. We open the door to a reasonable procedure and can determine what we shall teach and why we shall teach it and how we shall teach it in terms of human need and gain.

The other doctrine which must be reckoned with before the teaching of literature or any other subject can become a purposive undertaking is the doctrine of formal or general discipline. There is a passage in Browning's "chat" which prefaces his translation of the Agamemnon of Æschylus in which he says:

> Learning Greek teaches Greek, and nothing else; certainly not common sense if that have failed to precede the teaching.

That is the question, does teaching literature teach literature and nothing else or does teaching literature develop the faculties of the mind and improve our

thinking powers in general? In the old days the answer to this question was that learning is specific. No justification except its utility had to be found for teaching anything as long as its value was clearly evident. No one had to offer the argument that the study of Latin and Greek improves the faculties of the mind as long as Latin and Greek were the languages of learning; but when men ceased to learn what they learned in them new reasons had to be assigned for continuing to study them, bad reasons to justify what they did from habit. It was about 1750 that the realists, champions of new studies, the native language, the surrounding things of nature, man's life here and now, pressed the teachers of the classics so near to the wall, that they had in self-defense to extemporize a new justification for an outworn practice. The justification that they hit upon was that while the old studies were no longer directly useful they must be retained because they improve the faculties of the mind. This doctrine was made in Germany. Its antidote also came from Germany, when Herbart, the psychologist, made the discovery that there are no faculties in the mind, that each one of us has no such thing as a memory, but a hundred memories, no such thing as an imagination, but ten thousand imaginings, no such thing as a faculty of reason, but many different acts of reasoning.

If the psychologists abandoned the faculty psychology nearly a hundred years ago, why do teachers retain it still? The answer is not to the credit of teachers. Many investigations have been made in

recent years to determine exactly what effect studying one thing has upon the doing of something else, like Professor James's effort to determine what help he got in memorizing one of Victor Hugo's poems by training himself through memorizing the first book of Milton's "Paradise Lost." He found that he memorized Victor Hugo more slowly after the training than before it. Some experimenters have found that the test series is performed more successfully after practice training than before it and therefore claim that we do one thing better because of having learned to do another, that is, that skill or training is transferred from one context to another. The question is what is meant by the transfer of training? If one learns to drive a Packard car he can also drive a Stanley steamer, that is, the skill in guiding the one car will be available in guiding the other, for thus far the two tasks are identical; but if engine trouble develops in his Stanley steamer will his familiarity with the Packard motor tell him what to do or will he require a special knowledge of the steam car? I think you can see that as long as the novel situation is recognizably the same as the familiar one it requires the same reaction or nearly the same reaction on his part and that there is no transfer of skill, but only a repeating of acts already learned. But when the identical reaction will not do, a new method of handling the situation must be learned. If one tries to treat a steam engine as he has learned to handle a gas engine his knowledge of the gas engine will be an interfering rather than a facilitating factor. Knowing how to drive an electric automobile does

not enable one to drive a Packard or a Ford. Though there is much that is identical in the two tasks there is much that is different.

Now strictly speaking we must not call the repeating of an act already learned a transfer of training. "In the literal sense," says Professor Dewey, "any transfer is miraculous and impossible. But some activities are broad — they involve a coördination of many factors." "It would be, perhaps, nearer the truth," says Pyle, "to say that all habits are specific, but that some of the situations in which a habit is applicable are universal." If we take this view that any transfer is miraculous, but that specific forms of skill when once acquired can be repeated whenever the situation is not too novel to call them forth, we must abandon general discipline altogether and devote ourselves to the humbler, but far more profitable, task of teaching those forms of specific skill which have clear and definite applications in life and to teaching them in connection with their applications.

The validity of this position is, I think, confirmed by the fact that investigators commonly explain the so-called transfer which they find as due to the presence of identical elements in the training and the test series. And why is it that many experimenters upon this subject have failed to find in their results any warrant whatever for the doctrine of general discipline? Such is clearly the conclusion of the last experiment which has been conducted in the division of education at Harvard, and such is Professor Spearman's conclusion from the elaborate experi-

ments which Dr. Sleight conducted. "The great assumption upon which education has rested for so many centuries," he writes, "is now at last rendered amenable to experimental corroboration — and it proves to be false." If further confirmation is needed, it may be had in abundance by any one who will take the trouble to puzzle out the questions: why is it that inventions are so rare? and how can it be that studies will provide a general education for youth when they do nothing but turn adults into specialists? It is asking far too much to insist that investigators of this subject should agree in either their findings or their conclusions from them. Their verdict can not be unanimous, but what they have already done puts a decided cloud upon the whole theory that we must learn to do one thing by doing another, and makes it impossible any longer to build a philosophy of education upon the uncertain ground of formal discipline. There are far better reasons for studying literature than for the sake of literature or for the sake of the general discipline derived thereby. There are specific reasons for studying it, and specific objects of a very definite sort to be attained by that study. What they are you who are quite familiar with it know far better than I do.

You will recall that passage in Plato's "Republic" where he gives as his reason for objecting to some of Homer's stories about the gods and about the after life that "a young person can not judge what is allegorical and what is literal; anything that he receives into his mind at that age is likely to become indelible and unalterable; and therefore it is most

important that the tales which the young first hear should be models of virtuous thoughts."

> And we must beg Homer and the other poets not to be angry if we strike out these and similar passages, not because they are unpoetical or unattractive to the popular ear, but because the greater the poetical charm of them, the less are they meet for the ears of boys and men who are meant to be free, and who should fear slavery more than death.[1]

I can not but believe that no matter how long the world may last and poems and stories be written, this will be the last word as to their meaning. They are meant to be models of virtuous thoughts, meet for the ears of boys and men who are meant to be free and who should fear slavery more than death.

The poet's power is a greater power than the scientist's or the historian's, yet he deals with the same subject matter that they handle and he addresses the same audience. All the products of human thinking are on their way to his mill. He is the master-revealer of their significance, a transformer whose mission it is forever to compel the mind to the uncommonness of the commonplace. His it is to keep the Green Meadow where there are samples of lives. Xenophon makes Nicerates say:

> My father designing to make a virtuous man of me caused me to get every verse of Homer by heart.[2]

One may question the effectiveness of the method, but he can not well question the purpose which prompted the study of Homer. Strabo reports Eratosthenes as saying that the poet directs his whole

[1] Republic, 387. [2] Banquet III.

attention to the amusement of the mind, that is, that the mission of literature is to please. But in opposition to that idea Strabo declares that

> The ancients define poetry as a primitive philosophy guiding our life from infancy and pleasantly regulating our morals, our tastes and our actions. . . . On this account the earliest lessons which the citizens of Greece convey to their children are from the poets; certainly not alone for the purpose of amusing their minds, but for their instruction.[1]

We study literature to-day because the Greeks in their wisdom made it a permanent part of the course of study of all civilized people. And we study it for essentially the same reasons as they. They were wiser than we in making much of the reading of the poets and they were wiser than we in making much of the content of literature and little of its form. When the Romans came to study it, they applied the linguistic methods of the Alexandrians to it. They had to master a foreign language and that together with their devotion to the art of making speeches made them acutely conscious about style and the formal aspects of the writings which they studied. When antiquity arose from the dead the first book on education which our renaissance parents unearthed was Quintilian's "Institutes of Oratory" and out of that they made their education and ours too, for ours has come down from them. Our education is Roman, therefore, rather than Greek, and our practice of studying literature grammatically rather than interpretatively follows the defects of the Roman practice rather than the

[1] Introduction to the Geography I-II-III.

superior virtues of the Greek. There is little necessity for employing the Roman machinery of literary manipulation. There is much more to be said for the interpretative method of the Greeks. It is hardly more necessary to mix up linguistics with the study of literature than it is to mix up linguistics with the study of history or science. The force and directness of the primitive philosophy which the ancients said that literature is, is obscured by that practice. Again, "to know the best that has been thought and said in the world" we shall have to be familiar with the literature of the world; it is not enough to study English literature. I have long wondered why we do not introduce our students to the world's greatest books instead of confining ourselves so largely to those that have been written in English.

Plato must still be our guide and adviser. We must follow the example which he set us of very carefully selecting the lessons which we would have children study and learn.

FORMAL DISCIPLINE AND THE STUDY OF THE CLASSICS

THERE is evidence that the war which has been raging has spread beyond the battlefields of Europe to the ramparts of education. If controversy develops and can develop only about unsettled matters, the place of the classics seems to be of that order, for they exact a deal of active support from their upholders now-a-days. No fewer than three defenses of them, all of relatively recent date, are on my table. One is the address on "The Worth of Ancient Literature to the Modern World" by Viscount Bryce in the *Fortnightly Review*.[1] Another occupies a full page of the *Boston Evening Transcript* and is headed: "Senator Henry Cabot Lodge in Defense of Classical Learning — An eloquent appeal for a return to the humanities by way of escape from the hard practical training that has ruined Europe."[2] The third is Professor Shorey's "The Assault on Humanism" which runs through two numbers of the *Atlantic*.[3] There must be a reason for such a concourse of mighty champions. We can hardly assume that, like Germany, they are engaged in defending a homeland which had not been attacked.

[1] April, 1917. Since republished by the General Education Board.

[2] June 2, 1917. In the volume of proceedings of the Princeton Conference, "The Value of the Classics," Princeton University Press.

[3] June and July 1917. Reprinted as an "Atlantic Classic."

At any rate, there are few signs of the times more encouraging than that "the languages," both in Europe and America, are on the defensive and that their heaviest artillery is brought up to protect them. What kind of a defense do these master artillerists make? Not a well-concerted one, as a comparative study will show.

First, their statements are divergent. Professor Shorey attempts to show "why your boy should certainly study Latin if he is going to college, and probably, if he is going to complete a high school course." Viscount Bryce is more moderate. "It is generally admitted that at the universities the present system can not be maintained. Even of those who enter Oxford or Cambridge, many have not the capacity or the taste to make it worth while for them to devote much time there to Greek and Latin. The real practical problem for all our universities is this: How are we to find means by which the study, while dropped for those who will never make much of it, may be retained and forever securely maintained for that percentage of our youth, be it 20 or 30 per cent, or be it more, who will draw sufficient mental nourishment and stimulus from the study to make it an effective factor in their intellectual growth and an unceasing spring of enjoyment through the rest of life? . . . . We shall effect a saving if we drop that study of the ancient languages in the case of those who after a trial show no aptitude for them. But means must be devised whereby that study shall, while made more profitable through better methods, be placed in a position of such honor and importance

as will secure its being prosecuted by those who are capable of receiving from it the benefits it is fitted to confer." Here is a distinction of first-rate importance which neither Professor Shorey nor Senator Lodge seems to have grasped.

In the classics, Senator Lodge thinks he has found the philosopher's stone of education, for he declares that the dominant purpose of all education is to teach the boy or girl "so to control their minds that they can apply them to any subject of study and especially to a subject which it is a duty and not a pleasure to master and understand. When this power to use the mind is once thoroughly attained, the boy or girl can then learn anything which his or her mind is capable of receiving or acquiring. . . . I think we may also agree that as any form of exercise will develop some muscles and some forms will develop all, so any kind of study, properly pursued, whether it is arithmetic or Sanscrit, will develop the muscles of the mind and give it the power of continuous application by a mere exercise of the will."

That is the ancient doctrine of formal discipline in its nakedness. It is not irrelevant to ask if there ever really have been youths or maidens anywhere who have learned so to control their minds that they could apply them to any study whatsoever? Would not that be a misfortune rather than a blessing? And what are those forms of exercise which will develop all the muscles of the body? Senator Lodge has evidently never burnt his fingers upon this much controverted educational dogma. Professor Shorey has, and is altogether more wary of it.

"Whatever some foolish advocates of the classics may have sometimes said, the systematic exaggeration of the value of merely disciplinary or gymnastic study is no essential element in our unwillingness to have American education regulated out of hand by experts who hate 'Lycidas' and think 'Comus' a bore. It is not true that the schools of to-day are dominated by the ideal of formal discipline." We are grateful to Professor Shorey for the first concession, but in the last statement we think he is mistaken. He rests his assertion upon "the actual curricula of the schools and the statistics of election," but greater familiarity with the doctrine would have shown him that formal discipline is not an adjective which applies to subjects, but a method; or, rather, the absence of all method — of studying them. There are no subjects which must be treated in that fashion. It is simply a mistaken way in which mistaken teachers may teach all subjects whatsoever if they have never taken pains to provide themselves with a better philosophy of education. That the overwhelming majority of teachers in elementary schools, high schools and colleges still wander in the limbo of this superstition will be evident to Professor Shorey if he takes pains to visit their classrooms or to question them upon the faith which is in them.

Again, we are not at all sure that with all his disclaiming Professor Shorey is not of their number himself. There is a curious kind of taking back what he says in one part of his article in later parts of it and a curious inability to write about the dogma of formal discipline as though he understood it. He

avers that Mr. Flexner's main contention is "that psychological and educational science does not recognize any such thing as mental discipline." That surely is an overstatement. Neither Mr. Flexner, nor any other man, who has not lost his wits, talks in that way. There are two kinds of mental discipline, general and specific. The controversy is not about the reality of mental discipline, but about the reality of general mental discipline. No educator could work at his trade a minute longer if he denied the reality of specific mental discipline. If we do not learn what we study, why study at all? But that surely is very different from saying that we learn one thing by studying another. It is quite true that the technical testimony of science in respect to the irradiation of acquired faculty in the more elementary processes of the mind is still under debate, but that debate has already proceeded far enough to show that the irradiation which takes place, if it takes place at all, is of but very limited value and by no means supplies a foundation for a theory of education. The further investigation of the question: To what extent does such irradiation take place? is an interesting problem for those investigators who believe that psychological questions can be made to take mathematical answers if pursued long enough, but is of no practical significance to educators, for the proof is already overwhelming that a philosophy of education simply cannot be built upon this quicksand. It is not true that the experimental study of the dogma of general discipline has nothing to contribute "to the practical purpose of estimating

the general disciplinary value of high school and collegiate studies." Upon that point Professor Spearman is a more competent witness. The essential consideration is not the number of elements in common between the mastery of Latin grammar or vocabulary and other desirable kinds of knowledge; the essential consideration is: Under what conditions is the learner likely to recognize that a form of activity is called for in the new situation which he is already familiar with in his studying of Latin grammar; *i.e.*, under what conditions will his new problem key off or call forth his old familiar response? The answer is that the new situation will call forth the old response only when he sees it as a new case demanding a like treatment. He will be able to bring it under a familiar classification only when the familiar context has plenty of middle terms in common with the new. The reason why Latin grammar is a poor training in analyzing is because the material which one learns to analyze there is so unrelated to almost everything which he will ever be called upon to analyze again. It is non-representative material. The more one studies it the more his attention is diverted to that sort of thing, and the more of a specialist in that he becomes. Those who get comfort in believing that science leaves this question just where it found it; that is, "to the adjudication of common sense," are surely welcome to their conclusion. Only they should be a bit more careful not to describe it as intelligent or to believe that it is perfectly well known to competent psychologists. It is a play upon words to say that science has not pronounced

a definitive verdict. Its verdicts are rarely, or never, definitive. Witness, for example, the Darwinian hypothesis or the lack of a definitive history of the Greeks. In this case, as in those, there is an overwhelming mass of evidence which lends a strong presumption that upon this point Professor Shorey is wrong.

It is begging the question to say that "the dead set against 'mental discipline' is polemics, not science." It is mere rhetoric to dismiss the protest against the faculty psychology as "the most intolerable of twentieth century commonplaces." A professional student of words and their ways should be more careful not to misunderstand eminent psychologists, like Lloyd Morgan, who discuss education in terms of mental faculties. The words may be the same as Professor Shorey uses and the thought quite different. It may not make the slightest difference to secondary or collegiate education whether the so-called faculties of the mind "exist in separate form," but it does make the greatest difference whether or not they exist at all or are only a figure of speech. Referring to the metaphysical problem of the many and the one, lends but slight assurance. For purposes of education we must deal with the activities of mind, which are many, and acquiring skill in any one of them will not provide us with skill in general or skill other than that which we have specifically acquired. The burden of Professor Shorey's contention seems to be that we can learn by wholesale if we will only study Latin. He, like Senator Lodge, scorns to be a mere retail trader

in the market places of education. He teaches a preferred subject and plays lightly with great names and holy words to conceal its identity. Stripped of appealing verbosity — and, may I say, of skillful sophistry — its name, which escapes him but once according to my penciling, is linguistic analysis, or Latin grammar.

These defenders of the classics agree that it is their message to the heart of man which constitutes their supreme claim upon us; they portray for us the life which our ancestors lived in antiquity; their hopes and fears, their triumphs and their cares, stir our emotions, and purify and harmonize our thoughts. In this way they help us to a knowledge of ourselves and of folks about us and, because they generate within us wholesome notions of things human, they are called humanities. No service could be greater. The conscious weaving of the well-selected past into our lives is not a part, it is the whole, of education. The love of the past, it has been well said, is the true fatherland.

But though that and nothing else is our ideal of education, there are grave doubts about the sufficiency of the means which these defenders of the classics would employ to give them the desired influence over the young. They all insist that the Greek and Latin authors must be read in the original, though Viscount Bryce qualifies that statement by declaring that if that is not done the "style and the more subtle refinements of expression will be lost, but the facts and a great part of the thoughts will remain. The facts and thoughts are well worth

having." To us they seem to be the element of greatest worth. If anything must be lost in our study, we think it should not be the thoughts which the writings of the master minds can arouse within us. But the school study of the classics fails lamentably to arouse them. In the last fifteen years it has been our privilege to give courses in the history of education in three of the large universities and one of the leading woman's colleges of our country. In that way we have had opportunity to test the familiarity of hundreds of college students of Latin and Greek with the thoughts and ideals of the men of the great past whose writings they had studied in the original. These students were many of them the best young men and women of their college and had been carefully prepared for its classes in the leading high schools and private schools of the land. Our conception of the history of education was not that of the ordinary textbook. We claimed for the period of beginnings much greater attention than for the eras of subsequent development. The declaration of Sir Henry Sumner Maine that "aside from the blind forces of nature, nothing moves in this world that was not Greek in its origin" seemed to us to be nearly literally true. One half of our year we spent in an intensive study of the life and thought of the ancients. That all too brief semester was ever a season of delight. We examined the hideous war machine called Sparta; we traced the beginnings of democracy at Athens; we studied the Periclean Age and heard the Sophists speak to their admiring crowds of followers; we followed Socrates about the streets of

his city and listened to his speech in defense of his life; and then we read and discussed that dialogue of Plato which Rousseau called "the greatest book on education ever written." The limits of our time forbade us to think of taking it up in Greek. We studied it in translation; we traced the spread of Greek education through the world, and when we came to Rome, we did our best to understand her institutions and her aims. Throughout this course we used the sources and attempted to reorganize and integrate what we had learned of Greek and Latin life in other classes. We had not learned much. Most of us had heard of Socrates and looked upon him as a martyr, but none of us knew what his mission in life had been or in what way he had made all men beholden to him. Only four of that long procession of students had made the acquaintance of Plato, though many had read one or more of his dialogues in Greek. Of Aristotle, they knew even less, and to my annually repeated question: What was Virgil's purpose in composing the Æneid? I never but once got the correct reply.

Senator Lodge criticizes Emerson for urging the reading of the classics in translation. Emerson's well annotated books in his library at Concord show that that was the method which he followed. No other American has yet read them to such advantage. How one should read depends upon what one wants. If the reading is for linguistic reasons or to discipline the faculties of one's mind, he must keep to the original. But, if his purpose is not to treat his author as a specimen of Latin or Greek composition,

or an exercise book in grammar, it is hardly likely that the young learner will make for himself as good and satisfactory a translation of Plato as Jowett or Davies and Vaughn have made for him. It is difficult — almost too difficult — for students to follow the course of Plato's thought in English; when they translate him from the Greek, they forget there is any thought there.

The fact is that it is mere play upon words to defend the study of Latin and Greek in secondary schools and colleges in the United States on the score of humanism. Humanism it is not, and humanism it rarely tries to be, save in written or spoken defenses of the study of the classics. The only assault which is being made upon humanism is that which grammarism is making. From year to year the pious fraud goes on and none are more deluded by it than the teachers of the classics themselves, who seem to think that any sort of occupation with the text of an ancient author is sufficient to make his worth known and admired by the student. This is the familiar fallacy of the part and the whole. It may be true that there is no such thing as thought without language — though the experience of every one of us denies it — but it is not true that there is no such thing as language without thought. The concept and its name are as surely two different existences for each of us as Hamlet's wicked foster father declared them to be. Occupation with the word has always tended to prevent occupation with the thought which lives behind it.

It is pleasant to turn from this bog of confusion

once more to the lucid discussion of Viscount Bryce. "Let us recognize that the despotism of a purely grammatical study of the ancient languages and authors needed to be overthrown. Let us also discard some weak arguments which our predecessors have used, such as that no one can write a good English style without knowing Latin. There are too many cases to the contrary. Nothing is gained by trying to defend an untenable position. What we are really thinking of when we talk of the ancient classics is something far above grammar and the study of words, far above even inquiries so illuminative as those which belong to Comparative Philology. It is the ancient world as a whole; not the languages merely, but the writings; not their texts and style merely, but all that the books contain or suggest." What the books contain and suggest is indeed priceless, but do the students get to it who pass through the long grammatical discipline of the high school and the college? As I understand it, it is not against the classics but against the patent misuse of the classics that the modernist protests, and his protest is not silenced by reminding him that he has no right to expect the classics to be well taught until he can show that other subjects are well taught also. That may or may not be true. The modernist believes that they are badly taught for the reason that the philosophy which is behind that teaching is a jumble. Professor Shorey and Senator Lodge have furnished him the proof that that is so. Until the champions of these studies disentangle the reasons for studying them with a bit more skill, confusion is

bound to attend the teaching of them. Even so clear-cut a thinker as President Hadley follows up his story of the boy who was asked about Julius Cæsar and replied: "He was a great general who wrote a textbook for beginners in Latin," and his comment: "This is no unfair caricature of the mental attitude in which tolerably good students approached the great names of classical antiquity" with the statement: "The schoolmaster who can show us how to make French a means of developing intellectual power and persistence, as Latin or Greek has been the means of developing them, will confer a boon upon the school and college world." Power and persistence are the last words in his, as in Professor Shorey's and Senator Lodge's defense of them. But power and persistence are not synonymous with an appreciation of human force, human freedom and human activity as they existed in antiquity. They are not even compatible with it. How Petrarch, Erasmus and Melancthon would have groaned at such a perversion of the true aim of their beloved studies! They had a clearer vision. They knew that the preliminary philological discipline must never be allowed to become the main matter. "A Latin grammar of thirty pages," said Matthew Arnold, "would amply suffice for the uses of philology."

Professor Shorey complains that the innovators are robbing Greek and Latin of their saving power; that educational reformers are not new, wishes for a comparative psychology of impatient educational revolutionaries, and dismisses the whole brood of

them with a sneer. They are not new. This world has been blessed and renewed by a long line of them from Socrates and Plato down. They too had the courage of their "insensibilities." The type has been recurrent, for such men were needed. The story of education, like that of every other race-old endeavor, is an account of tragic mistakes, perverse errors, arrogant and man-consuming tyranny and Moloch-like dogmatism demanding that the children be fed for the good of society, now to one, now to another, idol. No, modernism is no new note in education, just as it is no new note in theology or politics or science or philosophy. It is an ever-recurring operation which each generation must perform upon its inheritance in order to live well, a service consecrated by such names as Plato, Quintilian, Abelard, Roger Bacon, Petrarch, Melancthon and John Milton, each of whom turned upon the futility of much which his contemporaries were attempting and felt himself commissioned to point out a better way. The conviction in the mind of each of them was none other than that of the greatest educational innovator of them all when he asserted that the young must have the best, whatever it is, if they are to have the chief thing needful.

"The best!" That surely is worth hunting for. It seems to me a little incongruous to support the claims of the humanities by a general vilification of the contemporary literature of education, in which an honest, though at times misguided, effort is made to hunt for the best. Tastes in authorities differ, Professor Shorey has told us. So do tastes in

methods of conducting battles and arguments. The berserker method has of late become a rather inadequate device for spreading culture. As long as those who study education learn more about it than those who do not, it will disturb them little to have their knowledge called psuedo-science by a critic whose frantic effort for twenty years to strangle the infant of their tending has resulted only in getting for it larger and ever larger opportunities to grow.

A humanist who "sticks to his last" does not need to be warned of the ὑβρὶς that goes before destruction. The case of Darwin and the bishops and of the classics against science are rather too recent not to carry a warning. One who thinks that the last word about the processes of memory, association, judgment, and the relation of language to thought, was uttered by Mill, Taine, Schopenhauer, Emerson, Quintilian, Cicero or Plato, or that they themselves did not advise search without ceasing about these very matters, has only to read them more carefully.

Stripped of rhetorical verbiage, this defense of humanism is not at all concerned with the human spirit, but is mere intellectualism prescribing an arid regimentation of words. "Words are our substance here," wrote Gregory Nazianzen, "they are our supreme interest, we live for them, and if we are asked to give them up, we cannot live at all."[1] That view was then, and is no less now, a wicked perversion of the teaching of Plato: "And, if you continue to be

[1] "Against Julian," 100 *et seq.*

not too particular about names, you will be all the richer in wisdom when you are an old man." [1]

"You will agree," writes Viscount Bryce, "that the time has come when every one should approach the subject, not as the advocate of a cause, but in an impartial spirit." The question is not how can the grammatical study of Latin and Greek be preserved as indispensable parts of education. It cannot be preserved; it is already hastening to its grave. The question is: How can the study of the ancient world be brought to life as an essential part of education? The teachers of the classics have devoted themselves so exclusively to mental gymnastics through linguistic exercises that the wisdom literature of the past has been lost and almost forgotten. Humanity is not their first interest and to many of them it is not an interest at all. Since they have wrapped their talent in a napkin, it must be taken away from them and committed to others who know how to put it out at interest and derive profit from it. Who are those more trustworthy stewards who know how to use it? The teachers of history, ethics, philosophy, politics, literature, science, mathematics, and education. They know that the past is priceless because it is not dead but living. They know that it contributed the concepts with which we now work, but they also know that the student who would profit by the study of the classics must be nourished by their concepts, not their words.

[1] "Statesman," 261.

WHAT IS HISTORY AND WHY DO WE WANT IT?[1]

I WANT first to raise the question: Why do we care for history? that I may go on in the light of the answer to that question to consider what parts or aspects of history we really care for. Never since the world began has there been a time so informing as the present. All the forces that operate in the life of man have stepped out of the mists of familiarity and redefined themselves with ghastly distinctness before our eyes. We knew in a vague way that human existence depended upon the tilling of the soil; but now, when one-half the world struggles against starvation and the other half faces it as a not remote contingency, we realize the condition upon which soul and body remain together. Fuel and clothing, strangely enough, become more distinct the farther they remove themselves from us. Steel and iron, railroads and ships, dollars and taxes, chemists and common laborers, all have lost the taken-for-grantedness of yesterday and, as if by transfiguration, have revealed the part which they play in the lives of us all. What a vast simplification is here! And how inexplicable seems the dullness which kept us from discerning the significance of these things before. And material things are not alone in taking on clarity of existence. Politics,

[1] An address to the Political Science Association of Southern California, Feb. 16, 1918.

ethics, law, philosophy, religion, literature, music, science, mathematics, and education as well, have cast aside their obscurity of purpose and stand before us disclosing what they are and what they attempt to do. History, too, whose mission was even more obscure, perhaps, than theirs is seen to be a simple thing — too simple to content the craftsmanship of her votaries in the past and too necessary a human commodity to be allowed to fail us in the future.

What is it that has made food and fuel and clothing and steel and money and ships stand out so clearly? Our want of them. What is it that has made the essential nature of government — morality, legalized action, sane thinking, true religion and undefiled, the criticism of life which literature is, the elevation of the spirit which music should be and is not, the service of science, the usefulness of mathematics, the nature and helpfulness of education, so evident to us all? Our need for these things. We do not want them for themselves. We want them for what we can do with them, for the use we can make of them. They get their value wholly from our need. Unrelated to our purposes, they are nothing to us. It is not they that have changed. It is our purposes that have magnified themselves and the objects with which they deal. The war has forced us to be acutely conscious of wants to which we gave but humdrum attention as long as they seemed to get themselves supplied more or less automatically.

One of these acutely sensed wants is for a knowledge of the conditions out of which this conflict of human purposes has grown. What is its history? We must

have that knowledge, for we must rectify this disastrous outcome in human relations and prevent it ever recurring again. That knowledge, therefore, is a matter of life and death to us all. We do not want it for its own sake. It is not knowing unmixed with volition. It is knowing demanded by volition. Our historians who spent their lives in reckoning the tendencies of the past gave us no sufficient account of the course which we were pursuing. They did not warn us of danger. They did not foretell the future which the past was creating. Theirs is not an exact science. Neither is meteorology, yet the meteorologist can discern a storm when it is gathering and can forecast its probable course and its consequences. The historians were not able to do that. Though it seems there were plenty of intimations of its coming, they passed unheeded. Why? Most likely we shall never know the answer. If the business of intelligence is to foresee conditions, to anticipate what steps must be taken to control them, Germany's ability to launch a colossal war which she had been preparing for forty years, upon a world so innocent of what was impending, must remain the crowning proof of the world's unintelligence until the end of time. How it could have been done as it was done passes understanding. "Why did not some of you professors who read German books and are supposed to be intelligent enough to understand what they contain tell us what they were planning and writing about?" asked a friend of mine. I could reply only that their perfervid rhapsodies over the war which they said was coming seemed to

us to be merely a new and strange kind of literary outlandishness in which they were trying to outdo each other. Even so close a student of things German and so acute a thinker as Viscount Haldane, in his address before the American Bar Association at Montreal on September 1st, 1913, took occasion to say that "the barbarism which once looked to conquest and the waging of successful war as the main object of statesmanship, seems as though it were passing away."

Can history not predict? Is its function merely to describe what has happened? Can it do nothing to help us to take note of, and get ready for, what is coming? There is a saying to the effect that history never repeats itself. If that is so, history can be of but slight account to us. But, is it so? If every moment of our lives was wholly unlike every moment that went before it and wholly unlike every moment that came after it, we should never know that we had a past. There would be no anticipation of the future. Indeed, there would be no future and no such thing as time, or memory, or science, or learning, at all. Every moment is unlike every other moment in some respects, but it is also like them. We remain somewhat the same through them all, our needs remain somewhat the same and the world of folks and of things in which we supply our needs remains somewhat the same. It is this oneness of our lives, this relative constancy of our environment that makes experience possible, that makes learning helpful, and that makes anticipation a means of safety. I and my fellows are different.

We do not have the same feelings and the same thoughts; we cannot even be sure that we have similar feelings and thoughts; we cannot match them or compare them, but we do act in similar ways, and similarity of actions leads us to conclude that the thoughts and feelings which are behind our acts are similar also. If each generation were different from every other generation — wholly and completely different — then, though the members of every single generation were alike and the memory of what its members had done since coming upon the earth would be of value to it, that memory of what any single generation had done would be of no value to any member of another generation than his own. The race would be blotted out and renewed, generation by generation, but, according to our assumption, there would be no continuity of character between one generation and the next. In such a world, history, I think, would have no advantage. There would, to be sure, be the story of what each generation had done in its earlier days which its members would continue to tell each other until they passed from the scene; but just as soon as they had passed away beings completely different, according to our hypothesis, come on the stage. Their physical wants are different, their means of getting a livelihood are different, their customs and ways are different, their hopes and fears, their aspirations and desires are different. Can what happened to the animals which preceded them be of any concern to them? They started no undertakings which the newcomers must carry on, they left no unfinished business which the new-

comers must push toward completion, their experiences and their struggles have no guidance value for their successors. Something, many things, happened to them. Would the newcomers trouble themselves to find out what they were? Would they take pains to know a past which was merely past? I think not. It is continuity of purpose which makes history vital. The description of events is only a means to serve it.

A distinguished historian in an eastern university tells me that another distinguished historian once said in his hearing, "My interest is in the future." "It seems a strange thing," my informant said, "for a historian to say. I should have thought," he said, "that, being a historian, he would have recognized the fact that history deals wholly with the past and that the historian must be concerned with it alone." One of the things that this war is teaching is that history is not primarily concerned with the past. It studies the past, but always for the purpose of enlightening us concerning the present and to make us prepare for the future. No matter how much the historian asserts his impartiality and his scientific neutrality, the fact remains that he is, and must be, a selector. If he says that his concern is for the facts of the past, for the facts and all the facts and nothing but the facts, he must still choose them. There are too many of them to permit him to attend to them all. Take the history of the civil war. Let our historian set out to describe the facts of that war. How many of them are there? Something happened to every soldier who took part in that war, from the

moment of his enlistment to the moment of his mustering out. Every moment of that period something happened to him and likewise something happened to every man, woman and child connected with him and to many, perhaps even to most of the men, women and children in the world, because of that war. Now, let our scientific historian who undertakes to describe the past get to work. The task is impossible and as futile as it is impossible. Even the most scientific of historians does not attempt anything so foolish. He selects from the infinite mass of happenings a few, a very few, for our contemplation. Why does he select the ones which he does select? Why, for example, does he expect every school child to follow him as he attempts to untangle the campaigns of the Civil War? The only answer which I know to that question is because it is traditional for him to do so. Is there any real justification for that tradition? I do not know of any. A defender of that practice will say: "But history must be real and those campaigns are real, therefore they must appear in the textbooks." But what about the infinity of real happenings which do not appear there? History simply cannot be photographic. The historian must paint a portrait, he must portray the past from his point of view, which is far more likely to be different from that of other historians who have described the same period than to be like them. Such a thing as the definitive history of a state or nation, even of a dead state or nation, does not exist. Every generation attempts to write its own version of the history of Greece and

Rome. Why is that? The answer seems to be that the writing of history is a form of creating. Each new generation has problems of its own, problems which have never before come so acutely to consciousness as they do in its time. It interrogates the past from the viewpoint of its own problems. It seeks in the past some light upon their answer. From this standpoint, the writing of history is far more like the process of hunting in a letter file for a certain letter which you have reason to believe is there than attempting to make a summary of all the letters which one finds in the files.

Again, under what conditions can a people have a history? Can Mexico with its aimless seethings of brigandage and faction fighting have a history? Can there be a history of events which are merely sporadic and random, which can not be strung on any thread of purpose? Chronicles of what has happened there may be, but no history until something is foreseen, imagined, desired, planned, proposed and struggled for. All history is, and must be, a history of undertakings; a history of happenings is impossible. A world made up of insane men would be rich in happenings but utterly without history. And, whenever the actions of men nominally sane approach theirs in incoherence, history ceases in just that degree to care for that subject matter.

Now, if we are at all right in the view that it is the aimfulness of human striving that gives it historical value, may we not at once pass to the answer to the second question and say that it is clear that the parts or aspects of history which we really care for are those

which affect our own undertakings and shed light upon the purposes to which we have committed ourselves. It would be difficult to imagine high school classes spending as much energy upon the history of Japan or China as they now spend upon that of Greece or Rome, the Middle Ages or modern times in Europe. It would be difficult; but conditions might, and even may, arise which would send us all to a study of that very history of China or Japan which we now scorn or treat as nearly meaningless to us. The history of Germany existed in English before the war began, but it was treated as a rather distant and remote body of records by most of us. Since the war began, every part of it, from Tacitus down, has become alive with meaning.

My contention, supported by these illustrations, is that our concern with history is because of its pragmatic value. That fact will be recognized in the future as it has not been recognized in the past, and the study of history, both in order to set it down, and to comprehend it, will take on a far more consciously purposive character than it has had in the past. The historian will try to make us acquainted with the streams of tendency which are pouring themselves through the ages in the purposive undertakings of the different nations and the characteristic groups of peoples in them, and we on our part will study the dynamics, rather than the statics, of the past. This will make the task of the historian harder, far harder, than it has been before; harder, but more meaningful, for he must analyze away the husk of facts and supply us with the kernel of significance.

To do that, he must start with the very thing which he has systematically derided in the past; namely, a philosophy of history, and by its aid he must select the facts which have worth from those which are so dead and foreign to living human interest as in no wise to concern it. History will then be a kind of chart by which human undertakings may get their bearings. From the standpoint of the student this change will result in a great simplification. His study of history will lead to self-orientation, rather than the purposeless garnering of masses of facts, undigested and indigestible, which he is fated to carry about with him as a heavy load which destroys his energy and results only in stupefaction. I can put the matter somewhat concretely in an illustration. There was a battle once — a little battle — at a place called Concord. Many things happened there. Every man engaged wore clothes of a certain kind, carried weapons of a certain sort, was commanded by certain officers, sang or heard certain songs, fought after a certain fashion, gave or received wounds. The details of that small battle are both numerous and stirring. But what is it that we want to know about that fight? What is the immortal part of it? The purpose which expressed itself and accumulated force there. If the spirit of '76 were not alive to-day, Concord would leave us as unmoved as King Creon's command that the brother of Antigone go unburied. When it makes so little difference whether a body is buried or not, you cannot make a tragedy out of the withholding of burial rites. Correspondingly, if the time shall ever come when it makes no difference

to folks whether they are slaves or free, the battle of Concord will drop out of the histories. Marathon and Salamis will follow it, but rather afar off, for their dramatic setting gives them an added claim to the attention of men. Whenever men cease to carry that line of goods, they will cease to take thought of what happened at those places. Forgetting is the great fact and at the same time the great necessity. We must do all in our power to assist it. How handicapped a world would be which constantly reminded its members of their ancestral past after the fashion of one of those tiresome and futile complete redintegrators of Jane Austen's novels! The one way to civilize a people is to put them into conditions in which they will be constrained to forget their savagery and their barbarism. It must become a thing of loathing to them. Christianity was, perhaps, entirely justified in minimizing the importance of the study of the ancient writings of Greece and Rome, for if they had not been forgotten, the unlovely life of which they were a part would have remained an object of fond recollection, and those who recollected it would have reënacted it and it would thus have lived on in the world in spite of its hideousness and in spite of the fact that mankind had found a better way. Just so Germany has not profited by filling its mind with the triumphs of the Huns or the thought of the wide extent of the territory over which Charlemagne ruled. The past may be as poisonous when remembered as it was when it existed. That, I think, must have been the reason for Lord Acton's charge: "I exhort you never to

debase the moral currency or to lower the standard of rectitude, but to try others by the final maxim that governs your own lives and to suffer no man and no cause to escape the undying penalty which history has the power to inflict on wrong."[1] J. R. Green has it that without the moral and spiritual life "history is nothing but an old almanac."[2] In these days of censoring we can see, I think, that the writing of history must be a rather vigorous censoring of the past. Thus does the issue stand between the realistic and idealistic schools of historians; but the battle is going against the realists nowadays, for the impossibility as well as the unprofitableness of their program is painfully evident. On the other hand, Germany is a witness that history made to order will not do.

What kind of history, then, do we want? It must of course be true, but it may be true and have no bearing upon present human undertakings; in that case it will be barren. To escape that, it must confine itself to the unfinished business of the world and leave the dead and inert past to bury its dead. What I mean is that the history which is worth teaching is the history which will tell the student of Sparta and Athens and Rome and Carthage, the Middle Ages, and the founding of our country, such a story and in such a way that he will be constrained to say "Why, that is just what we are doing to-day." Until he can see that these are the earlier chapters of the same story which we of to-day are writing his

[1] "A Lecture on The Study of History," p. 63.

[2] "Historical Studies," p. 249.

study will not be of much profit to him. But they are the earlier chapters. The war has reëstablished that fact in the minds of us all. They are the earlier chapters, and in the days to come we shall be interested rather more in the continuity of human striving, in the evolution of nations and institutions, in what might be called the trial balance conception of history, than we shall be in the daybook method of studying it.

I think we have allowed ourselves to be much deceived by words. A large part of our study has been an effort to follow the careers of governments, nations, causes, societies, etc., mystical entities, all of them, and only folks voluntarily or involuntarily yoked together in servitude to this, that, or the other notion, agent, or necessity. When we discover, as we are now discovering, that Europe is a name for folks, Germany is a name for folks, France is a name for folks, and Greece, classical as well as present day, a name for folks, we shall be in a fair way to separate what we need to know about them from what is too trifling and inconsequential for us to bother about.

I have for a long time gotten much help, both in my own thinking and that of my students, by asking the question: "Where is the United States?" The first reply is apt to be: "It is between Canada and Mexico and the Atlantic and Pacific Oceans." No, that is not the United States. It is the territory, the land, of the United States. That was all here when Columbus came, but there was no United States here. The second answer is apt to be: "It is at Washington, where the President, the Congress, and the Supreme

Court are." No, that is the government of the United States. Where and what is this thing that we call the United States? The answer is clear. It is just a name for folks who have united themselves together, to work together, and live together in certain relations under certain rules. The United States is only another name for this desire, this intention, this determination. If any one could separate us from that determination, the United States would cease to be. It is a choice, a purpose, a plan, a resolution of our minds, hearts and wills. The United States is only in the consciousness of its people. If they should cease to will it, it would cease to be. It is constantly renewed by every resolution of its citizens and by taking in new citizens who profess this conviction and join its company. Now, why do we teach them its history? Why do we not say to them: the United States is what you see here now, you have no need to know anything more about it. If one were suddenly told that he had been elected a director of a corporation with which he was completely unacquainted, what would his first question be? As soon as he had recovered from his first surprise, I think he would ask: "What is the purpose of that undertaking?" "In what business is that corporation engaged?" And his second question would be: "What has it done up to date? What have its difficulties and what have its successes been? I want to know what I am undertaking, for the character of my response will depend upon that." Whether we will it or no, each of us is a director of the vast corporation which we call the United States.

It is for that reason that we must know the character of the business in which it is engaged and the successes and failures it has met in carrying on that business. We do not want to know all that has happened to it, but that which has directive value we must know. For that reason I regard history as an instrumental study whose parts must be selected sparingly with an eye single to their utility. We carry on the unfinished business which our fathers began. History tells us what that business is, how it began, what it is for, and what its difficulties and rewards are.

If the United States were the United States of the world, this account would be sufficient to tell the whole story. We see now that it is not. We are members of a greater company, partners together in a vaster enterprise. We must know what the world undertaking is, and how that undertaking fares now and has fared heretofore. Folks trying to live together; what are their plans, their attempts, their successes, and their defeats? The story of that purposive endeavor, and not the record of events or happenings, is what history is.

RELIGIOUS EDUCATION AND THE WAR[1]

First let me attempt to answer the question why it is we want religious education. These are the days of fundamental things; we have reached rock bottom in human interests; we stand before the naked realities and reckon with them in all their immediateness. The covering of convention, custom, tradition, politeness, whim, fancy and habit has been stripped away; life is no longer anywhere a pleasant promenade along a flowery, secure, and well-protected way. The human race fights against impending slavery, and death against a maniacal king and a maniacal people whose mania is no sudden frenzy, but of that sinister kind which prepares by plotting and planning and accumulating of weapons for long years the grewsome murder which it would commit.

In the presence of this horror we have no thought for the differences which divided us in earlier days. They are too trifling for consideration now. We are not greatly concerned that young people shall be taught the essential doctrines of Methodism rather than the creed of Congregationalism, or whether they are being brought up to take due note of that which distinguishes Baptists from Disciples or Disciples from Presbyterians.

[1] An address before the Los Angeles Community Training College of Religious Education, November, 1917.

A world aflame has no heart to devise the triumph of the Greek church through undoing the Roman church, and no stomach for plans which further the Roman church at the expense of the Greek communion; neither Protestantism nor Catholicism has time or thought to make proselytes now. When the enemy of the human race has been put down we may renew the doctrinal and denominational diversions of an earlier day. My own conviction is that we will not renew them. We have been taught a wholesome lesson; we have learned to distinguish the things of great moment from the things of little moment, and henceforth as long as your generation and mine lasts, we shall cleave fast to that which concerns us greatly. I am going to say, therefore, that our interest in religious education is far too serious to be sectarian.

I am going farther than that. I am going to say that our primary concern with religion is not otherwordly, but this-worldly. Perhaps it will serve us beyond this world of time, perhaps it will not. We will wait and see. Death draws a curtain between this world and that — we have abiding faith that what matters there matters here, and matters there because it matters here. "Nothing but good can befall a good man." The only way to be worthy of continued existence is to exist worthily now. We have hope, I say, of the power of religion in the hereafter. We are certain of our need for it now.

And that certainty has seized upon all mankind, the evidence is everywhere about us. Sir Arthur Conan Doyle declares that when he finished his

medical studies he found himself a convinced materialist, and a convinced materialist he remained for many years. But when the war came "it brought earnestness into our souls and made us look closer into our beliefs and reassess their values." The publication by a secular writer of a book on religion, hot from the crucible of his own soul, devoted to the thesis that "Religion is the first thing and the last thing, and until a man has found God and been found by God he begins at no beginning, he works to no end"—that is H. G. Wells' book, "God the Invisible King,"—and its appearance and the lively interest it has evoked show that the war has indeed brought earnestness into our souls. You, yourselves, yes, all of us, are witnesses to it. We are undergoing a reawakening of religion and strangely enough, though men die by millions, this revival of religion has amazingly little to do with the hereafter. It is desperately concerned with the here and now.

How came this new-found need for religion into the world? The Germans are responsible for it; they have forced the human race to this discovery as to so many other discoveries. They have in their own person shown us what religion is not, and what it must be, and is. If they win this war, it will be the overthrow of Christianity. Never before has the religion of compassion been so defied as now.

Let me show you two pictures — the first from Germany, the second from the Bible.

"Inasmuch as in all ages," says Nietzsche, "as long as mankind has existed, there have always been human herds (family alliances, communities, tribes,

peoples, states, churches) and always a great number who obey in proportion to the small number who command — in view thereof of the fact that obedience has been most practiced and fostered among mankind hitherto, one may reasonably suppose that, generally speaking, the need thereof is now innate in every one as a kind of formal conscience which gives the command: Thou shalt unconditionally do something, unconditionally refrain from doing something. In short 'Thou Shalt.' This need tries to satisfy itself and to fill its form with a content; according to its strength, impatience and eagerness; it thereby seizes as an omnivorous appetite with little selection, and accepts whatever is shouted into its ear by all sorts of commanders — parents, teachers, laws, class prejudices, or public opinion."[1] "He who would command finds those who must obey."[2] "An effort and a risk seemed all commanding unto me; and whenever it commandeth the living thing risketh itself. Yes, when it commandeth himself, then also must it atone for its commanding. Of its own law must it become the judge and avenger and victim."[3]

"The object is to attain that enormous energy of greatness which can model the man of the future by means of discipline, and also by means of the annihilation of millions of the bungled and botched, and which can yet avoid going to ruin at the sight of the suffering created thereby the like of which has never been seen before."[4] "He believes that danger,

[1] "Beyond Good and Evil," p. 120; Levy's translation.
[2] "Will to Power," Vol. I, p. 105.
[3] Zarathustra, II, XXXIV. [4] "Will to Power," Vol. II, p. 368.

severity, violence, peril in the street and in the heart, inequality of rights, secrecy, stoicism, seductive art and deviltry of every kind — in short the opposite of all gregarious desiderata — are necessary for the elevation of man. . . . The aim should be to prepare a transvaluation of values for a particularly strong kind of man, most highly gifted in intellect and will, and to this end slowly and cautiously to liberate in him a whole host of slandered instincts hitherto held in check. Whoever meditates about this problem belongs to us, the free spirits. . . ." [1] "He is colder, harder, less cautious, and more free from the fear of public opinion; he does not possess the virtues which are compatible with respectability and with being respected, nor any of those things which are counted among 'the virtues of the herd' . . . . He would rather lie than tell the truth because lying requires more spirit and will. There is a loneliness in his heart which neither praise nor blame can reach, because he is his own judge from whom is no appeal." [2]

And the word of the master became the deed of his followers, the deeds which this people to whom Nietzsche was a prophet and lawgiver, have committed. The essence of Pan-Germanism, says one of their own writers, Dr. Friederich Curtius, is Atheism. Its "purpose is nothing less than to compass the suppression of the Christian faith and the morality which is its outcome. A German religion is to be born, a religion allied to the Woden worship of our ancestors. . . . The German nation representing

[1] "Will to Power," Vol. II, p. 363. [2] *Ibid.*, p. 366.

the noblest and most favored of races, the loftiest revelation of humanity, has become its own God."

Anti-Christ has come, for this people denies and tramples on all things Christian. Ever since the war began mankind has felt that it is civilization itself which is assaulted. And this wholesale defiance of Christian adjuration and precept has forced the lesson upon us that civilization and Christianity are not indeed two things, but one. He who talks of religious education and plans and devises its extension has no other thought than to preserve in a day of peril and of terrible undoing all that the race holds dear.

Let us put over against this paranoia of the Germans some statements of essential Christian belief. Israel is forever talking of the Eternal and saying that man achieves not by power but by His righteous spirit. The Eternal is righteousness and loves righteousness. From Genesis where the Eternal declares "I know him [Abraham] that he will command his children and his household after him, and they shall keep the way of the Lord to do justice and judgment"[1] down through the long ages to the last word of Daniel, the prophet of the Captivity, the note is the same: "At the beginning of thy supplications the commandment came forth and I am come to shew thee. . . . Seventy weeks are determined upon thy people and upon thy holy city to finish the transgression . . . and to make an end of sins and to make reconciliation for iniquity and to bring in everlasting righteousness."[2] The Psalms are full of it: "But I trusted in Thee, O Lord; I said, Thou art

[1] Genesis xviii; 19. [2] Daniel ix; 23 and 24.

my God" (Ps. xxxi; 14). "Blessed is the Nation whose God is the Lord" (Ps. xxxiii; 12). "Their sorrows shall be multiplied that hasten after another god" (Ps. xvi; 4). "Thou satest in the throne judging right" (Ps. ix; 4). "The Lord trieth the righteous: but the wicked and him that loveth violence his soul hateth" (Ps. xi; 5). "Trust in the Lord and do good" (Ps. xxxvii; 3). "If I regard iniquity in my heart the Lord will not hear me" (Ps. lxvi; 18). "Come, ye children, hearken unto me; I will teach you the fear of the Lord. Keep thy tongue from evil and thy lips from speaking guile; Depart from evil and do good, seek peace and pursue it" (Ps. xxxiv; 11, 13, 14), and of the Eternal's enemies David says: "For the wicked boasteth of his heart's desire and blesses the covetous whom the Lord abhorreth; the wicked through the pride of his countenance will not seek after God. God is not in all his thoughts. His ways are always grievous; thy judgments are far above out of his sight; as for all his enemies, he puffeth at them. He hath said in his heart, I shall not be moved for I shall never be in adversity. His mouth is full of cursing and deceit and fraud, under his tongue is mischief and vanity. . . . Wherefore doth the wicked contemn God? He hath said in his heart, Thou wilt not require it. Thou hast seen it for thou beholdest mischief and spite to requite it with thy hand; the poor committeth himself unto thee, thou art the helper of the fatherless. Break Thou the arm of the wicked and the evil man, seek out his wickedness till thou find none" (Ps. x; 3–7, 13–15).

We are speaking of religious education. There can be no such a thing as education until there is a lesson to be taught, instruction to be given, comprehended, and acted upon. Rites can not be taught, they can only be performed. If Christianity is a religion of rites, you do not want a teacher, you want a priest to perform a ritual. A great many folks think that Christ came to perform a rite, the most significant sacrificial rite ever performed on earth. To others he is a teacher sent from God — the great Teacher. What did he teach? Three lessons, I think, that the world must learn if it would be Christian, and that we must teach if we would be teachers of Christianity.

The first is that the Eternal is our Father; that his Spirit of righteousness moves in all things and is the very life of the universe. Eye hath not seen him nor ear heard, he does not come to us from outside, he is within us, nearer than hands and feet — a firm conviction assuring us that though the heavens fall and the earth be wracked, and the wicked rage and destruction and sin seem to command all things, yet is righteousness the law of the Eternal, and we must not for a moment doubt it. To hold fast to this conviction is hard, for at times such as these we live in, men seem to forget the difference between right and wrong, God seems to go out of existence and life to become a great orgy of vanity and idiocy; yet we must have faith, the kind of faith that Robert Louis Stevenson uttered when he said, "I believe in a principle of decency in things, yea, though I woke in hell, should still believe it."

And the second lesson, which the great Teacher taught is: you, I, every man is a son of the Eternal Father. Christ never forgot that relation. He repeatedly spoke of himself as the elder brother, and of the rest of us as members of that family. Think what a transformation it would bring in our lives if we would take this seriously and think of ourselves in that way, — if every morning when we got up, we should say to ourselves, Son of God, what work is worthy of thee to-day, or when faced by a temptation, we should remember to ask ourselves, Son of God, what action befits thee now?

And the third lesson follows immediately from these, if God is the Father and I am his son, and you are his son, then we are brothers, brothers to all men, members of the family of mankind, in duty bound to live in the community, by the community, and for the community, all members one of another.

That is Christ's program, that is his revelation. It is to that life that he is the way. And those who study religion are occupied in learning what that righteousness is which is the essence of the Eternal, and in identifying themselves with it trait by trait in their daily giving and taking with their fellowmen.

"May it not be said," writes Sabatier, "that for our contemporaries, religion is the instinctive need by which a man is led to realize his better self, to unite with those who can serve him as guides or companions in that difficult task and to endeavor to realize together with them what the inner witness prescribes?

"In so far as man considers, reflects, and discusses, philosophy exists. Religion exists when man, ceasing to be merely a witness of his own life, and that of the community, throws his will into the balance, proclaiming himself a collaborator in the eternal task which he apprehends and to which he devotes himself."[1]

I am not at all interested in that religious instruction which consists only in the memorization of portions of the Bible, the creed and the catechism. There is to be sure some gain in enlarging one's vocabulary from such a rich collection of words as the Bible contains, but it is gain of language merely, and while that is valuable, we lose our object if we stop at that. And I do not believe in religious education merely as an effort to make young folks familiar with the literature of the Jewish people. Matchless though that literature is, it would be a very profanation of opportunity to study it, and not to study it as vastly more than a series of poetical or of prose narratives. It is a question whether any of the productions of the past, which is worth studying, is to be treated merely as an opportunity for literary analysis or literary appreciation. The object of the great writers was not to produce literature, but to counsel, warn, and encourage, that is, to instruct their readers. To get that counsel, warning and encouragement is the prime reason for studying the Bible.

And I do not think we can agree with the Frenchman, Jouffroy, that when the church teaches us its catechism after the commonly accepted fashion, and

[1] Sabatier, "France Today," p. 19; Dutton & Co.

then "asks the young Christian, whence he came? he knows it. Whither he is going? he knows it. How he is to attain his end? he knows it. She asks this poor child, who never in all his life thought about such matters, why he is here, and what will become of him after death? he gives a sublime answer. She asks how the world came into existence, and why God made it and the plants and animals? How the earth was peopled, how diversity of language, how suffering originated? He knows all."[1]

That method of religious instruction has been tried, and has proven to be worse than a failure. The one nation which has made a place for religious instruction of that sort in its public schools, as well as in its churches and its homes, for all these years has shown itself to be more unprincipled than a society of criminals, more savage than the most ferocious savages. While it memorized and repeated the words of the meek and lowly Jesus, its people plotted murder and every form of anti-Christian wickedness, and said in its heart, there is no God.

We can not do without theology any more than we can do without philosophy, for the most important thing about any of us at all times, and in all places, is the notion of the nature of things, the notion of what sort of a place this universe is, that he carries about with him. There is a tendency to delusion in each of us, which must constantly be combated or our theology will sink into idolatry or become fouled with superstition. The only way to keep our

[1] Jouffroy, "Mélanges Philosophiques," p. 424, quoted by Bruce, in "Social Aspects of Christian Morality."

notions of God from becoming incrusted with false opinions, which do both us and Him dishonor, is to be critical of them, to question them, to talk about them, to put them to the test and prove them. The trouble with memorizing as a method of religious instruction is that it prevents that. The German people memorized their religion and threw themselves heart and soul into proving to themselves and to each other that they were far too great a people to be bound by the ordinary notions of morality, until they actually were convinced by their words, and retain their religion which forbids such action merely as an empty shell.

I heard the Vicar of the Cathedral in Montreal preach a most remarkable sermon about a year ago at Appleton Chapel. He spoke of the changes which the war is making and particularly of the change in religion. He referred to the Jewish conception of the Eternal as demanding righteousness and to the fact that Judaism was wholly unable to formulate definitions of its beliefs. The Greeks supplied these definitions, they organized the creeds of Christianity, and we cling to them as though they were the essence of the matter. We say that people must accept the creed to join the church, yet we know that they are saved by character. We must redefine the kingdom of God in terms of goodness and character and all good men must unite together to build up the earth.

Here is a new program for Christianity, but it is an old program. It is Abraham's program, David's program, Daniel's program, Christ's program.

There never was a time since civilization began when its program called so loudly for championship and support. We live in the age of completed sinfulness. Righteousness, goodness, kindliness, meekness, and every other virtue which Christ taught, and with which he and the prophets and lawgivers before him sought to save the world have been derided as mere feebleness and unmanliness. Shall the world forsake this way or shall it turn upon the enemy and destroy him by borrowing his weapons and using them against him?

There never has been so clear a proof of the power of education in all history as that which Germany provides. Here was a people obviously devoted to idealism, to Christianity, to homely life, and to the simpler virtues, whose leaders many years ago set about converting it to their mad plan of capturing the world. They used the school and the schoolmaster as their instrument, and employed the drill sergeant and the parade ground to complete the work which he began. They pounded in patriotism, they indoctrinated every German with the thought of national superiority. They caused them to repudiate their own natural kindliness, to turn against the teachings of their faith, to make nothing of their habitual morality, to take little thought for life itself if it could be offered to help to build the new Moloch, which the nation was obsessed to erect.

We cannot make out how their minds work or understand why they value these things, we hate and abhor their actions, yet we must admit that their instructors have done the job thoroughly; there is

among them a unanimity in wickedness, which is appalling. If we should bend ourselves with the same energy to teaching the lesson of righteousness, could we not hope for as complete a result?

A friend of mine has recently called my attention to this more encouraging aspect of things. His question concerned Democracy. "We know very well," he said, "what notions destroy it, and what notions make it strong. We also know the public school is its conserver, that if it can be saved anywhere, the place of its salvation is the public school. Now let us, therefore, with one accord, after the German fashion, by incessant indoctrination commit the children of the public schools to the thoughts and actions which conserve democracy; for example, every public office is created to accomplish a certain work, not for the sake of providing a living merely to the person who holds it. Could we not by incessantly bearing down upon the fact that public office is opportunity for service, in a generation, create a body of public servants who would have no other notion of their work?"

It is a great undertaking, yet it can be done, but only upon one condition, that the teachers shall first be trained to the point of being obsessed by that idea.

The same thing is true of religious education. It is surely easier to train the young to an unflinching devotion to righteousness than it is to train them to an unnatural wickedness when all that it promises is an opportunity to die for its unholy cause. Yet the Germans have accomplished that, and we may profit by their experience to undertake the opposite.

Religious education is not different in anything, save in its purpose, from the other forms of education. The same principles apply, the psychological procedure and the methods are the same. The lessons (I mean the collection of verses, and chapters in the hands of the learner) are not the chief thing. Next to the learner the teacher is. The choicest and most life-giving material in the whole Bible may become repellant and forbidding, or at least merely a tale which is told, in the hands of a poor teacher; whereas, it is sure to be surcharged with life in the hands of a good one. The main thing in this form of education, as in every other, is first to determine what it is we are trying to do, what result we are seeking to accomplish. The next step is to gather the tools, which contribute to that result, and of these the trained and skillful teacher is by far the greatest.

OUR UNDERTAKING AND WHY WE UNDERTAKE IT NOW[1]

THIS is a war of nations. It is everywhere conceded that the victory, when it comes, will belong to that nation or group of nations which comes out of the conflict least broken, best prepared in spite of the demoralization of battle to take up the pursuits of peace. To make war to the utmost, and at the same time to make as active preparation as may be for the only kind of peace which gives our war meaning or value, is our program. That is the program of England also. Of the many manifestations of her unconquerable spirit, none is more striking or convincing than that, contrary to what might have been expected, her people are not wholly consumed by the demands of war, but have energy and interest enough to plan a reform in their national education as significant and almost as far-reaching as the reform of 1870. The very tension of war has aroused them to consider a thorough-going augmentation of elementary education as indispensable to the national welfare. Mr. Herbert Fisher, the eminent president of the British Board of Education, has for some months been riding a circuit of Great Britain telling its people that "the

[1] Inaugural address, Los Angeles State Normal School, January 5, 1918.

whole future of our race, and of our position in the world, depends upon the wisdom of the arrangements that we make for education," and asking them to support the Education Bill that his department has introduced, which prohibits the employment of children attending an elementary school during the hours that the schools are in session, provides for all children a full-time elementary education up to the age of fourteen years, and prevents their education from coming to an end when they leave the elementary school, by requiring that all young persons who have not received a full-time secondary education up to the age of sixteen years or are not under suitable instruction, must attend daytime continuation classes for 320 hours per year from the age of fourteen to the age of eighteen. And, although the finances of Great Britain are at present under a somewhat heavy strain, yet the Commons is asked this year to appropriate $19,000,000 more for education than it appropriated last year. The Minister's appeal to his people to regard education as a most important branch of the national service has resulted in an active recruiting of the teaching forces by the college women of England. Though she is fighting for her existence as a nation, Great Britain is more alive to the needs of education to-day than ever before in her history.

It is not otherwise with France — a few months ago the regents of the University of New York sent their distinguished Commissioner of Education to study and report upon conditions there. "I went," says Mr. Finley, "to see the schools in which France's

valor has been nourished." He came back with the warning that

> The intellectual and moral discipline, through which the children of one generation become the citizenry of the next, must be vigorously maintained in war time. France has restricted the use of food, fuel and light, but she has not taken from any child the heritage in which alone is the prophecy of an enduring nation.

The army and the school are the two agencies upon which the state relies in its day of extremity. If its army has been weak, it must make it strong and retrench in other departments of its life to do that. The school has an equal claim upon it. It exists for the general benefit also. It, too, is for public safety. The peril of our country brings a new realization of its importance. It is the agency created by government to consciously unify people, to consciously and systematically conserve ideals, to consciously mold and integrate public opinion, to consciously and persistently safeguard and increase the physical well-being of the coming generation, to consciously shape the instinctive desires and attitudes of the young to social ends, to transform the diffused and heedless energy of youth into socially necessary forms of skill, and withal to incite each child to vigorous and noble aspiration. If we are not disappointed when the President of the United States calls upon us to show ourselves a united people, we must remember that the unity with which we stand together is no happy accident, but the product of an intelligence which has been taught to distinguish right from wrong by indoctrination, long, patient

and, as we now see, effective; if in this our hour of destiny, we are elated to discover that we are indeed a people who fear slavery more than death, it is because we have been taught that lesson from our infancy; if the minds of folks are clear, stable, and agreed about what we must do, it is the schools which have made it possible for the public to have an opinion; if our youth, who take up arms by millions, are spirited, brave, and strong, the public school has done its part by them; if in the moment in which they go forth to battle there is no frenzy of delight, no barbaric lust to fight and conquer and despoil, but everywhere the subdued feeling of stern and regrettable necessity, and a deep preference for the unboastful ways of peace, it is because the school has tamed our inborn savagery and taught our feral nature to prefer the kindlier life; if we are resourceful and inventive, skilled in all the implements of construction and to shape and use the weapons of defensive war, it is because the school has made us all familiar with "the go" of things; if ten thousand forges are at this moment engaged in shaping cannon, and a thousand factories build aëroplanes, and five hundred shipyards construct ships, and men are drilling everywhere to man them, it is because our 500,000 schoolrooms have quietly been shaping us through the years to meet just such eventualities.

In times like these, the public school gets a new mandate from the people. Its reason for being becomes clear to everybody; its work becomes a new concern of all. It is seen to be the factory of democracy, the agency which conditions and creates

the national life. It is urged to bend itself with redoubled energy to its task. If it has done much and well in the past, it must do more and better in the future. The Germans, we are told, "are all taught why they should not wish to be free; but we are not taught why we should wish to be free." We accept that as instinctive. It must in days to come become articulate. There are many kinds of freedom and many ways by which real freedom once gained may be lost in spite of our devotion. It is a pretty blind and confused notion to most of us, and the means for safeguarding it are rather obscure and indefinite save when our organized liberties are menaced from without. We must make the maintenance and conserving of our democratic nation a universally comprehended program. There has been much talk about Americanizing the foreigner who comes among us. We are all being Americanized nowadays. It is a delightful experience. We shall not be slow in claiming a similar privilege for our children. After the first rush of arming is past we shall have educational drives as well as Liberty Loan drives, Red Cross drives, Food Conservation and Red Triangle drives. The nation at high tension is consulting its own welfare. Quite apart from the necessity of devising ways and means of protracting its self-defense, a people sacrificing itself for liberty can not escape a lively interest in the generation it is striving to make free. "We arm for men that are to be." Shall we not arm them as well as ourselves?

This school believes it has a part to play in that

educational arming. It is fortunately situated in the midst of a series of the most active and perhaps the most successful public schools in this or any other country. It takes pride in them and dares to believe itself responsible in part for their well-being, for those who have labored here in past time have not struggled and toiled in vain. But it longs to perform an even larger service, for it aims to be an institution which shall add to its worth.

We do not agree with Nietzsche when he says:

> The education of the masses can not . . . be our aim; but rather the education of a few picked men for great and lasting work.

The few picked men theory of life seems to us to hasten to destruction. That may be the ideal of education in a master and slave autocracy; it is not and can not be the aim of education in a democratic state such as we believe ours to be and are resolved to increase and perpetuate. Our ministry is therefore to the elementary schools and through them to the secondary schools, the colleges and the universities. Contrary to widely accepted notions, we look upon their welfare even in war time as subordinate to no other concern of the nation. While many treat them with condescension because they teach elementary studies, we regard them as the most important of all just for that reason. We think that the elements which they teach are not childish things to be put away when the student no longer thinks as a child or speaks as a child, but are instead the fundamentals of the activities of the human race, lessons which it begins in babyhood,

but which it can not put aside so long as life endures. "If we think of it, all that a university can do for us," says Carlyle, "is still what the first school began doing — teach us to read." The elements of the higher, or better, the later, schools' whole program are begun in the first school which the child attends. It teaches him the common language, and lays a foundation for all his subsequent study of the mother tongue; it teaches him to write, to compose his own letters, to draft his own little essays, and so makes a beginning of the difficult subject which his maturer years will study and practise as English composition. It gives him his first lessons in the great art of calculation; his subsequent study of mathematics will be profitable or unprofitable to him in proportion to the success with which he grasps and learns to work with the notions which are symbolized by figures. It introduces him to the yesterdays of the human race and tries to make him see that events and actions produce other events and actions here in this world of time; all history is his now for the asking. It is in his first school that he begins to examine trees and plants, and stones and soils, and forms his notions of the universe and starts his conquest and domestication of nature. It is sometimes said that the university exists to train leaders. It is, perhaps, more exact to say that it exists to train to yet larger leadership the leaders whom the elementary and the secondary schools send to it. Its leaders are leaders before they arrive at the university, and but for distinguishing themselves in the elementary schools, they would

hardly make their way to the university at all; had not the first chapters of the romance of learning appealed to them, they would have had no interest in the later chapters of its story. There is good ground for believing that the youth is more often made into a scholar by his first teacher than by his last one. At any rate, he seems either to learn how to study in the elementary school or almost never to learn how to study at all. If we but have good elementary schools, all the other educational blessings will add themselves unto us, but if we make the mistake of neglecting them and give the substance of our attention to the education which belongs to later life, we shall fail to make it enduring. Another way of saying this is, that only an intelligent people has need for universities. It is a singular fact that it was not until the common-school revival or indeed until the free-school system had begun to build itself strong at the end of our Civil War, that the colleges of our country amounted to much of anything or began to be of any very vital service.

Considerations such as these force us to claim for the elementary schools a larger measure of assistance than they have had in the past. Their work must be done, though other forms of education wait. What that indispensable work is, calls for careful definition. We derive no encouragement nowadays from the assurance that young folks are spending a proper fraction of their waking lives in keeping company with spelling, arithmetic, geography, and history. We no longer get any comfort whatever from the thought that though they may not be

learning anything which they will ever have occasion to use, their minds are in some mysterious way being made better and stronger than they were before. There is no magic in studies. We no longer look up to them or say prayers to them or perform rites of homage and worship in their presence. There may have been a time when woodcutters prostrated themselves before their axes or hunters said prayers to their rifles, but that was in the superstitious days before they had learned that an ax or a rifle has no value save as one can use it. Just so with studies; they have no life in them, no power to bless or transform us. They are not centers or sources of energy. Though our tendency to delusion may hypostatize them and treat them as self-existing entities, they have no beneficent vitality at all. They are not ends but means, nothing but tools which the race has wrought out to assist its members in the great business of living, tools which we must learn to use if we would arm ourselves for the struggle of existence.

This world has at last reached the stage where it sees that philosophy is the determining factor in man's being; that conflicting notions of the way to think of, and plan, human arrangements are responsible for the bloodshed and the devastating woes which now so overwhelmingly beset the earth. A great prayer goes up from every land for sounder notions of the way to live. This red baptism of agony and death is purging us of our delusions and vanities and bringing us to the essential realities. Education can not escape that purging. It, too,

must cut away unessentials; it, too, must abandon confusion, waste, and vanity, and be guided by a philosophy. That philosophy will not be materialism, for we have all seen that material things can not function as ultimate motives. It will not be a romantic sentimentalism, for that, too, has been found to be as humanly destructive as the lust for things. It will be inevitably an utilitarianism, for we now know with tried certainty that nothing counts but that which really and vitally serves the good of folks. Seek ye first a sound philosophy, therefore, and all things else will be added unto you, and above all, seek philosophy, ye who are teachers!

As we look back upon our past we see that we did and suffered many things before the war which we can not go on doing now. We talked of knowledge as an end in itself, we said we taught literature for the sake of literature, science for the sake of science, spelling for the sake of spelling, history just because it was history, and geography for the sake of geography. We know now that that was gibberish, rapid, unmeaning jargon, if it was not, indeed, something worse. We sometimes said that though we were not training our students to do anything in particular, we were helping them to do many things in general. We have now learned to sharpen our purposes so that we may not allow those who come under our influence to waste themselves upon vain things. This school feels that it has a duty to help the elementary school teachers of Southern California to distinguish worth from unworth and to reconstruct their work. They ask us for that help. We have

been placed together here in this favored corner of earth evidently that we may labor together. We are free from bondage to a constraining educational tradition. We can work together to fabricate the future, we can make education produce results such as it has not yet produced for any of us, we can separate the wheat from the chaff in school studies. Instead of teaching spelling for the sake of spelling we can put a committee of the best-informed specialists in all the schools of this region to work to select from the 400,000 words in the English language the 1000 words, more or less, which folks have need to spell when they write; and having thus sorted the few words which we all need to know how to spell from the many which it would be foolishness and waste of time to study, our committee can next hunt through the literature which reports the experiments which have been made, and tell us what is the best way to go about studying the spelling of these words so that every child shall have full opportunity to learn to spell them. Another conjoint committee selected from the schools and from the faculty of the normal school can present a similar plan for the teaching of reading. Another one can study and report on how to acquire the difficult art of penmanship. We have been told for years that arithmetic should be reduced to lower terms and better results should be gotten in its teaching. We all agree to that, but no one knows just what lessons in arithmetic should be taught and what should be omitted and just how they should be taught to get the results that the schools

are expected to produce. We can have a committee of experts work upon that problem and when they bring in their report we can incorporate it into our courses of study and with one accord go to work upon that better plan. Instead of continuing to teach 10,000 facts a year to each school child who attempts to study geography, we can call together a group of experts who shall select for us those five hundred geographical facts, more or less, which each school child should learn to work with in his use of that subject. We can in a similar fashion find out what are the essential lessons which should become organic principles in every child who studies the history of our country. We can perform the same service for our common study of our language, of music, art, manual training, elementary science, and physical training. When we have worked out our purposes and aims and have shaped our courses and our means, we can then intelligently supervise our teaching and weigh and measure its results.

To the question, then, what may a normal school do for the community in the midst of which it is planted? we reply, it can be an organizing center for the work of that community's schools. But it can not do that if it conceives of its function narrowly; it can not do that if it stands apart from the educational agencies of its neighborhood. It is created by the state to serve, and serve it must, if it would fulfill its mission.

It must not merely accept students who apply for its instruction, it must select them. It must send its representatives into the high schools to urge the

importance of the teacher's calling upon young men and young women who are engaged in choosing the form of service which they shall attempt to render to society. It must do its utmost when they come to its classes to help them to a vision of the life of man here on this earth, and to fit them to guide and direct that life to worthy ends. And, when after careful proving they are guaranteed by us as fit and able to be intrusted with the instruction of the young, we should follow them into their classrooms with our encouragement and our help to see to it that the labor which the state has committed to us by no means fails to be performed.

Since the art of shaping human powers and fitting them for social service is "the supreme art," since the community's duty to education "is its paramount moral duty," and since the teacher is engaged, not in training individuals alone, but in consciously shaping the future, in training the teachers who are to direct the forces and influences which play upon the young, we are attempting nothing less than to perfect the best of artists. We need time and infinite patience for that great task. Ours is a professional school. We have no desire to make it a general culture college, but we do want to be permitted to do the work which has been assigned to us thoroughly, carefully, and well, and we do want to be able to attract to this school its share of the earnest-minded, capable, and ambitious young people of this community. This school offers a four-year course to prepare teachers of music to give instruction in that subject in high schools, it has another four-year

course to prepare teachers of drawing, another four-year course to prepare teachers of domestic science, another four-year course to prepare teachers of physical training, another for teachers of mechanic arts, and still another for teachers of commercial branches. This is as it should be, for the time is none too long or the instruction too thorough to accomplish the results which we seek. But, side by side with our four-year courses to train teachers to teach single subjects in high schools, we have a two-year general professional course to train teachers to teach all the subjects which are taught in elementary schools. The thing simply can not be done. The disparity is far too great. If we are to perform the service which the state has commissioned us to render, we must have more time in which to perform it.

We want to be a professional school worthy of the name and of the place in which we work. By that we mean that we want to teach everything which we teach from the standpoint of the student either teaching it again or being directly and specifically influenced by it in his teaching. If we teach sociology, that does not mean that we are attempting to prepare teachers of sociology, but only that some understanding of the principles of sociology is necessary to any one who would attempt to teach. If we teach biology, psychology, the principles of education, the administration of schools, the history of education, and kindred subjects, we do it for the same reason. Literature, every teacher of an elementary school must teach, and to teach it should know

it thoroughly enough to make others comprehend its purpose and get instruction, warning, and encouragement from it. To teach the history of the United States the teacher should know that history deeply enough to comprehend how it began in "the greatest discovery ever made by man" twenty-five hundred years ago at Athens, how Roman law and order transplanted that discovery to western Europe, how church synods and church administration established it, as a model for our barbarian forefathers to follow, in the days of Theodore of Tarsus, and how century after century Englishmen fought for those English rights which were accorded them most grudgingly one by one, until at last they fought for them once more as Englishmen at Concord, Lexington, and Bunker Hill.

Much is required of us to whom the fostering of the children of the nation is given. We must more than suspect the elements of our trade. We must master the human purpose which is at the heart of each of the great arts which are so invaluable that they must be begun in youth and continued throughout life. Our students must, while they are with us, attain a high degree of wise discerning skill, not in a single one of them, but in them all. And more than that — far more than that — they must become proficient shapers of the feelings, interests, and actions of men. We want an eight-hour day, a six-day week, and a twelve-month school year in which to do the work that you have asked us to do. We want the privilege here in this great city of organizing normal school classes at night so that young men and young

women of aspiration who must labor in the daytime for a livelihood shall have opened to them an opportunity to fit themselves for the teacher's calling by harder effort than their more fortunate fellows put forth. We want to offer rich and varied courses of instruction bearing upon their work to the seven thousand five hundred teachers now in service in our schools. We want the privilege of training teachers more thoroughly for the elementary schools than you now allow us to train them. We want to extend our diploma course from two years to three years. We of this school are unanimous in that. And after our students have spent three years in addition to the four years of their high-school course in earning that license to teach, and have approved themselves by one or two years of teaching in the schools, we want to open a fourth year of professional study to them, and at its close we want to reward their effort with a professional degree.

We ask the privilege of building up as good a teaching service in this dear land as now exists in other regions. There are twenty-four state teachers' colleges in other parts of our country. California has none as yet. We have no desire to enter into rivalry with its splendid university or with its score of colleges which do their work so well. We say to them: We will not harm your undertakings, we will help them, for the more vigorously education is fostered in a growing country, the more the country grows.

I began by opposing to the statement of Nietzsche, "the education of the masses can not be our aim," the

counterstatement that the education of the masses is our aim. I want to close by opposing to his other prophecy, "The time will come when men will think of nothing but education," the declaration of Professor Franklin, "The time has come when men must think of nothing but education."

WHAT THE WAR IS TEACHING US ABOUT EDUCATION

ORGANIZING has been the order of the day everywhere through this land ever since April the second, 1917. We organize to produce food and to save the food which has been produced. We organize to raise billions for the defense of our homes. We organize to create a citizen army and to rush it to Europe. The railroads were not equal to their task so long as they pursued each its own way. To make them more efficient, the government welds them into a single organization. Ships must be had, millions of tons of ships, and to get them the Government creates a National Shipping Board with large powers of coercion and constraint. The manufacture of aëroplanes is directed by a single head. The making of guns and munitions is a coördinated undertaking. Prodigies of combined strength result, such as the world never knew before. We live in an era of mass effort. The bundle of sticks is unbreakable now that they are tied together. We dare not go our several ways if we are to lift the load which we the people of the United States have shouldered. That load is even heavier than we think. It calls for systematic effort of more kinds than we have yet made. There is a coördination of national strength by which Germany

through long years prepared herself for the domination of the world and that, so thoroughly, that her plan almost succeeded. She mustered her schools.

A little of that story is to be found in a volume which circulated freely before we entered the war. It does not circulate at all now, for it is a propagandist book devoted to making the worse appear the better cause. Its title is "Modern Germany." It is by "various German writers," most of them professors in German universities. Professor Ernest Troeltsch of Berlin, for the enlightenment of the world, contributes a chapter, on the spirit of German *Kultur*, in the course of which he takes pains to say that "in Germany the school organization parallels that of the army; the public school corresponds to the popular army. The latter, as well as the former, was called into being during the first great rise of the coming German state in opposition to Napoleon. When Fichte, while the country was groaning under the Napoleonic yoke, considered the ways and means of resurrecting the German State, he advised the infusion of German culture into the mass of the people, through the creation of national primary schools along the lines laid down by Pestalozzi, which were to educate the children according to well-established methods, to mental independence, moral self-control and intellectual self-development. This program was actually adopted by the different German states, and developed during the last century into a comprehensive school system of elementary, secondary, and university education.

This has become the real formative factor of the German spirit."

Those who have had the good fortune to read Professor Alexander's enlightening volume, "The Prussian Elementary Schools," know that fostering mental independence, moral self-control, and intellectual self-development was not the purpose of the German elementary schools. While it is true that they have been "the real formative factor of the German spirit," their effort has been to form that spirit to dependence, obedience, and intellectual slavery. "The whole scheme of Prussian elementary education," says Professor Alexander, "is shaped with the express purpose of making ninety-five out of every hundred citizens subservient to the ruling house and to the state. . . ." "The Prussian elementary school is the best in the world from the point of view of the upper classes of Germany. From the point of view of the lower classes, it is the worst system, for it takes from them all hope of improving their condition in life. The Prussian method of education has produced a people that moves as one man at the command of its King. The result is exactly the same as if one would take an infant and teach him only one word to be used in response to all situations — in Germany that word is Fatherland."

The people's school is the agency through which that enslaving has taken place. The child enters it when he is six years of age. It is a free school, while the gymnasium and the university are not. The children of the upper class and of the ambitious

middle class do not go to the *volksschule*. They enter a progymnasium. The child in the *volksschule* may leave it at the age of nine and enter a gymnasium class; if he does so, he can begin the study of the foreign languages which the Germans have erected into a wall to keep all but the students who are fortunate enough to be able to enter a gymnasium, a realschule, or a realgymnasium, out of contact with any form of higher instruction. They have not set up an educational ladder from the elementary school to the university. They have, instead, seen to it that the elementary school leads away from the university and prepares only for what their highly stratified caste system regards as inferior forms of service. It is a sinister device which they have invented to close the gateway to opportunity upon the child when he is only nine years of age; and it is very nearly as effective in keeping the bulk of the people in mental vassalage as a system of slavery would be. Once in a while a child leaves the *volksschule* and is rerouted in his education, but that happens so rarely as to be only the exception which calls attention to the rigor of the rule.

There are textbooks in the *volksschule*, but they are a subordinate feature of its life. Its instruction is given by the teacher who lectures or talks to the children and then calls them up, one after the other, to repeat what he has said to them. In a military nation there is a great advantage in this method, but it is not the advantage which some of our American educators thought they saw in it a few years ago when they contrasted our method of

instruction with it in the saying that "the German teacher teaches, the American teacher hears lessons." The German teacher uses his method of the authoritative word in order to prepare his pupils for the commands of the drill sergeant, the lieutenant, and the captain. If they are habituated from infancy to the authority of the spoken word over every other authority, they will believe what is told them by their officers and by their makers of opinion, and books and newspapers will have little influence upon them, and that is the way the government wishes them brought up. They must depend on the man who is set over them. The teacher is the textbook, a "speaking textbook," as Professor Alexander puts it. Consequently inarticulate books do not mean the same to them as they do to American children. Some of us, in our ignorance, were foolish enough to think that if President Wilson's splendid statements of the purpose of the United States in taking up arms could be dropped in Germany by aëroplanes, the German people would read them and be moved to give attention to his words. Nothing could be more unlikely. They give attention to the voice of their superiors, not to what they read in print, for so they have been habituated from their earliest years. Prince Lichnowsky's remarkable disclosure that Germany alone was responsible for starting the war was widely printed throughout the empire. It had, we are told, practically no effect.

In a German school everything is told them by the teacher and memorized by the pupils. They ask no questions. "I had visited over three hundred

classes in the *volksschulen* in Prussia before I heard a question from a pupil or a request for an explanation of a question which had occurred to him," says Professor Alexander. What is it that is told them over and over again until they can believe nothing else because they have never heard anything else? In the classes in religion, that God, King, and country are equally sacred, and that the King must be obeyed no less reverently than God himself, for the King is the representative of God and has been appointed by God to rule his faithful people. In the history classes they listen to a fiery glorification of the great deeds of the puissant fatherland and by it are wrought to "a German attitude of mind." In literature, too, the pounding in of patriotism goes on and Deutschland, Deutschland über alles, in fact, as well as in phrase, becomes the living purpose of the nation. They have all, with one accord, been brought up to contemplate their own greatness so exclusively that they believe themselves a peculiar people commissioned to rule over mankind.

The question which has shaped itself in the mind of nearly every man and woman alive outside of Germany— How did the *hochgeboren* Germans bring it to pass that the masses of their countrymen, in the unholiest of causes, fed themselves willingly, yes, even gladly, to the guns? — is answered: by their educational system. With the aid of the schools the leaders had but to will the kind of morality they wanted. They had but to say "evil be thou our good" to accomplish in the people the transformation they desired.

In the light of such a demonstration of the nearly limitless power of education as Germany has afforded, does our duty to education remain the same as before the war? Or, do we not face a new revelation of the power of this agency in human life? Germany, her protagonists tell us, rests upon two corner stones — the people's army and the people's schools. After this colossal demonstration no country henceforth can regard these instruments of national well-being, or of national self-destruction, with indifference. They are the means, and the chief means, to the kind of existence which any nation may aim to have. Its aim, let us hope, will be different from that of Germany, but its means will remain the same.

It is not surprising, therefore, that the people of the United States are bethinking themselves about schools and what is taught in them. They have been finding out what schools should mean and at the same time they have been finding out that they have not meant in the past what they should mean and must mean now. "The war crisis has disclosed to the nation, as no other event has, the strength and worth of the American school system . . . the emergencies and demands of war have laid bare certain weaknesses and shortcomings in the scope and character of public education that now call for readjustment and reorganization." That is the reason for the vigorous effort which is being made to revitalize the National Education Association and that is the reason for its national campaign to convince the American people that the government of

the United States must share with the states the responsibility of providing the funds, the administrative oversight, and the supervision necessary to Americanize our entire population, to bring something like equal educational opportunity to the children of the several states, and to conserve and foster our national ideals with such thoroughgoing devotion that the unity and conscious purposes of this people may not fail.

American teachers look with envy, not unmixed with self-condemnation, to the federated effort of their colleagues in France and the triumphal evidences of their united labors for the children of the Republic across the sea. They have set themselves the task of making their National Association as representative and as powerful a body as the Association of French Teachers.

They have called upon Congress to enact legislation to create a Department of Education with a Secretary of Education at its head, and to appropriate $100,000,000 annually for Federal coöperation with the states in the encouragement and support of education. The specific duty of that department will be to coöperate with the states in the abolition of illiteracy, three-fortieths of the sum annually appropriated to be used for that purpose; to coöperate with the states in the Americanization of immigrants; three-fortieths of the sum annually appropriated to be used "to teach immigrants, ten years of age and over, the English language and the duties of citizenship, and to develop among them an appreciation of and respect for the civic and social institutions

of the United States." It is proposed to apportion these sums to the states in the proportions which their illiterate and their foreign-born populations bear to the total illiterate and the total foreign-born population of the United States. Five-tenths of the sum annually appropriated is to be devoted to improving the public schools, below college grade, by extending school terms, now too brief for effective education, and stimulating state and local interest in improving, through better instruction, better grading, and consolidation, the work of the rural schools. Two-tenths of the annual appropriation is to be used in coöperating with the states in the promotion of physical education; three-twentieths of the appropriation is to be used "to encourage a more nearly universal preparation of prospective teachers." This in outline is the American counterpart of the English Education Bill. Like that famous measure recently enacted into law by Parliament, it is intended to cure some of the glaring weaknesses which the war has revealed in our educational system.

What were those weaknesses? Twenty-nine per cent of the young men examined in the first draft were found to be physically unfit for military service. Seven hundred thousand men, between twenty-one and thirty-one years of age, could not read or write any language and could not speak English. It is estimated that nearly 5,000,000 of our population are in that condition. Our knowledge of agriculture was found to be quite unequal to the demand put upon it at the beginning of the war. Knowledge of how to select and how to prepare food was another

national deficiency. When our young men were assembled in the cantonments they had to be taught the songs of our country, for it was found that they did not know them. The speakers of the National Security League, who went from camp to camp to address them, report that in the early days they met a dead wall of lack of comprehension of the causes of the war. Here were the young men of the nation eager and anxious to undertake the task to which the government had called them, but quite unable, without special instruction, to understand what it was all about. Our knowledge of our own history and of the geography of the world was grossly inadequate. These are some of the proofs of a most unsatisfactory condition of education among us. But the most striking proof of all is the fact that it took our people nearly three years to discover that their security was menaced, that their liberties were in danger. The cry "Wake up, America!" which came across the seas fell upon too many unheeding ears. This time we have escaped destruction, thanks to the vigilance and the indomitable will of our allies; but it is a low order of intelligence which can not discern danger before destruction is upon it, and one may well question whether a nation which is not more keenly self-protective than we were during the first two and a half years of the war is fitted to survive.

One of the compelling lessons we have been taught is that children cannot safely discontinue their studies at the early age of fourteen years. Many, most of them, do and have done so in the past, but that only proves that we must not be so careless of their wel-

fare and the nation's welfare in the future. It is self-evident that young people can not attain sufficient knowledge or sufficient maturity of mental habits by the age of fourteen to last them through life. If their notions of what our country is for, of our own duty to it; of our neighbors — the other countries of this world; — if their skill with which they make their contribution to the good of the whole; and their day-by-day choosings which decide what the nation shall undertake and be, are of any concern at all, they merit a more serious training than the present brief period of compulsory instruction provides. A world indifferent to its to-morrow paid but slight attention to the shaping of its future. That course led to disaster. It is now engaged in piecing together such elements of strength as still remain in the effort to build a more intelligent and enduring life than it has yet had. The British nation found itself compelled, in the midst of war, to lay a securer foundation for its national well-being in a reorganized educational system which provides for continuous instruction of the youth of the land up to the age of eighteen years. In France a similar reorganization of foundational instruction is proposed. The needs of the people of the United States are not less demanding. Never before has education been valued as it is to-day. Never have the schools been regarded with such solicitude by every class and kind of shaper of public opinion. Democracy is engaged in its final struggle with institutional autocracy. It is putting its age-long enemy under its feet. It is making the world safe for its own kind of

life. But what will make democracy safe for the world? Nothing but education. The pious wish for liberty will not bring it. The heartfelt prayer of hundreds of millions of souls for peace they must themselves answer. With the defeat and the utter overthrow of the Germans, the new Crusade has but begun. The schools must take up the struggle when the cannons cease. It is prophetic of the new order that the people of Jerusalem, as soon as their city had been recovered, began the erection of a Jewish university.

Symbolic of the new demand which the world undertaking is making upon education was that remarkable series of patriotic demonstrations which the Committee on Education of the War Department ordered some five hundred and fifty colleges and schools to hold at one and the same moment throughout the entire United States on the morning of October first. At 12 o'clock in the Atlantic Coast states, 11 o'clock in the central states, 10 o'clock in the mountain states, and 9 o'clock in the Pacific Coast states, the members of the Students' Army Training Corps were, in every college of the land, assembled around the flagpole to raise the flag and, in nation-wide unison, no less real because one group did not hear the voice of its neighbor, to pledge allegiance to it. "This day . . . will be remembered in American history," says the War Department in its general orders for the observance of that day. I know of no event which has ever taken place in our history of such significance that the government felt called upon to synchronize it and make it a

simultaneous action from one end of the nation to the other. On that occasion the national government felt such deep dependence upon the schools that it made the inception of their work a ceremony of such moment that the President of the United States addressed a special message to them. "The step you have taken," he said to the members of the Students' Army Training Corps, "is a most significant one. By it you have ceased to be merely individuals, each seeking to perfect himself to win his own place in the world, and have become comrades in the common cause of making the world a better place to live in. You have joined yourselves with the entire manhood of the country and pledged as did your forefathers, your lives, your fortunes and your sacred honor to the freedom of humanity. The enterprise upon which you have embarked is a hazardous and difficult one. This is not a war of words; this is not a scholastic struggle. It is a war of ideals, yet fought with all the devices of science and with the power of machines. To succeed you must not only be inspired by the ideals for which this country stands, but you must also be masters of the technique with which the battle is fought. You must not only be thrilled with zeal for the common welfare, but you must also be masters of the weapons of to-day. There can be no doubt of the issue. The spirit that is revealed and the manner in which America has responded to the call is indomitable. I have no doubt that you, too, will use your utmost strength to maintain that spirit and to carry it forward to final victory that will certainly be ours."

Substitute the word tools for weapons and this statement of the President becomes a perfect outline of the aim of education in the years which are to come after the war is ended.

The Students' Army Training Corps was created by express direction of the President under the authority of the Act of Congress which authorized him to "increase temporarily the military establishment of the United States." It was intended to hasten the mobilization and training of the new armies by bringing men into training before their numbers would normally be reached by the draft boards and by providing an opportunity to carefully rate and test the fitness of the individual members of the corps for assignment to central officers' training schools or non-commissioned officers' training camps or for further technical training. The instruction was to be specific and highly intensive. Its intent was to meet the needs of the war program which are immediate and pressing. The course of study, as outlined by the War Department, called for eleven hours per week of practical and theoretical military instruction and physical training, and forty-two hours per week of class work and supervised study of allied subjects, the allied subjects to be selected from the following list: English, French, German, Mathematics, Physics, Chemistry, Biology, Geology, Geography, Topography and Map-making, Meteorology, Astronomy, Hygiene, Sanitation, Descriptive Geometry, Mechanical and Freehand Drawing, Surveying, Economics, Accounting, International Law, Military Law, Government, and Psychology. One subject,

but not more than one subject, could be chosen outside this list. College presidents were instructed to make it clear to their students that success in winning a commission depended upon their demonstrated ability and the needs of the service.

The War Department announced its intention to fill the places of students who were withdrawn for assignment to other organizations with recruits selected for ability and maturity by army rating methods and army examining boards, without explicit reference to the usual college entrance examinations and ordinary academic rating systems.

Here was a colossal nation-wide educational experiment whose results are certain to permanently affect established practices in most of the colleges of the United States. Mr. Elihu Root, in addressing the assembled Students' Army Training Corps at Columbia University, said to them: "A new era begins in which all the learning of America is now laid upon the altar of service. . . . No one can measure, no one can conceive what it will mean in future years that you and the 150,000 other college and university students and all the learned faculty and all the alumni and all the Americans whose hearts are full of pride and hope in American education unite in concentrating military power and capacity and promise for the future in one pledge of sacred and unforgetable service to our country." The experiment did not come to fruition. The armistice was signed before it was well begun, but the change it introduced into American higher education was significant and not without its permanent results.

EDUCATION BY IMMEDIATE OBJECTIVES

Lieutenant-Colonel Paul Azan, in his monumental volume, "The Warfare of To-day," makes learning how the first step in the waging of war. The whole nation must be put to school. The infantrymen, the artillerymen, the aviators, the engineers, the cavalrymen, the medical arm, the quartermaster's corps, the railwaymen, the motor transport service, the intelligence department, the topographic branch, the ammunition makers, the ordnance makers, the shipbuilders, the maritime transport men, the convoy, the farmers, the merchants, the bankers, the manufacturers, in short, the entire population, must be taught, individual by individual, to take its place in the line or behind the line and perform its work of saving, consuming and producing the goods which are needed, be they merely self-denial, collaborating confidence, provision for the soldiers' dependents, assistance in conscripting and preparing the forces, shoes, clothing, arms, all the multifarious requirements, not of an army, but of a nation in arms. Two great principles, he believes, dominate the process of education thus set afoot: specialization and coördination. All must be trained; his discussion concerns only the combatants.

"The basis of organization for training rests upon certain extremely simple principles, so simple in

fact that they seem almost self-evident. Yet, as a matter of fact, they have been misunderstood in the past and still are misunderstood to-day. They are the following:

1. No army can be trained without teachers.
2. The teachers must be trained before the troops can be.
3. To train these teachers there must be schools for officers of all arms.
4. To organize these schools it is necessary to bring together the officers best qualified to give instruction.

" . . . . *No army can be trained without teachers.* This principle is evident; why is it so often misunderstood? The people who misunderstand it are in error as to the meaning of the word 'training.' Training, to their minds, means drill in bodily movements and attitudes, marches and alignments, rifle practice and bayonet exercises, etc. A knowledge of these things is supposed to be enough to make a trained soldier. This mistake has been made in every army by those who believed that the military profession consisted in the accomplishment of certain rites, and not in the apprenticeship for war. Teachers whose knowledge did not extend beyond these rites could teach nothing more to the officers and soldiers confined to their care; such teachers are quite incapable of teaching modern warfare. This is the idea which so many of my friends have misunderstood when they have asked me: 'How long a time do you think is needful to train an officer?' I have invariably replied: 'A

few months if he is intelligent and put under the care of a competent teacher; a year, eighteen months, or two years if his teacher is mediocre; and, in the latter case, all that he will accomplish will be to lead his men to be slaughtered." [1]

Not very long ago the whole world believed that a soldier could not be trained in less than two, or perhaps even three, years; at least, that he could not be trained in a shorter time to meet and withstand the onslaught of a thoroughly disciplined army such as the German troops were. America has been giving herself a new notion of her own resourcefulness and ability in the last eighteen months, and at the same time she has been giving herself a new notion of training. The ritualistic conception of warfare, she has discarded, and the ritualistic conception of training for warfare; and with that goes, as it is bound to go, the ritualistic conception of education of all sorts. Never before have the youth of the land had a chance to show what they could do under favorable conditions. Never before have they been able to break away from routinary prescriptions of content, hours, methods, and subject matter. Our universities and colleges, with their traditions of learning made in Germany and many of their professors trained there, set up before them so many blind absolutes demanding devotion that it was not until Germany herself forced us to it that we had the temerity to break away from the intellectual ritualism which she had spun. Absolutism in learning is no more defensible than absolutism in government.

[1] Azan: "The Warfare of To-day," pp. 53–54, Houghton Mifflin Co.

They grew up together — the soldier for his Kaiser, the citizen for his state, the musician for his art, the scholar for his science, all perverted humans who insist upon reversing the real relations of life and doing their utmost to turn bread into a stone. If we had been really critical, we would not have needed the war to teach us that German intellectualism, with its adorations and its scholastic rites, is as little like the genuine training which democratic intelligence demands as the formal but king-glorifying labor of the Alexandrians was like the genuine search for knowledge of the democratic Athenians. Just as German lower education had Kaiserism for its object, so German higher education had the ornamentation of the empire, rather than service to the citizens, for its aim. It studied the classics, but not for the sake of their humanity; it studied psychology, but only to forget the imponderables, the consideration of which is the chief reason for studying psychology; it studied religion only as a series of ignoble and regrettable human failings and then proceeded to make a religion of its own more cruel and inhuman than any which its study had unearthed. It studied ethics only to discover that morality is the will of the stronger. It studied international law only to put itself outside the pale of international law. History to it meant the glorification of the deeds of the German nation; philosophy, the identification of the absolute with the German spirit. The conclusion of all its instruction is that the state is God on earth. Of coordination of effort, there was enough there and to

spare. Every science contributed its share to the demonstration of the ineffable, all-glorious empire. All roads led to that result, for of specialization, of patient consulting of facts and following where they led, there was very little. Of training for war, there was more than enough; but of training for humanity, there was none, though they did much that to an uncritical world passed for that. Such results as were attained were not possible save to a learning that has become a rite.

Germany's example has become a warning to the world. The classics have other uses to serve than those of German *philologie*. Psychology is something more than a minute tabulation of the infinitely complex traits of human beings; religion is something other than a curious chapter in the natural history of man; duty or justice is not "a lofty Presence transcending all considerations of expediency." International law is more than a body of historic documents; history is not a record of chauvinistic triumphs, while philosophy is something other than the march of God to Prussia. An academic system that allowed such attitudes to be engendered, such convictions to be formed as those which have characterized the intellectuals of Germany in the last half dozen years did not consult, employ, or comprehend the wisdom of the ages or the experience of mankind. German higher education, therefore, has to be explained. That devotion to learning could have led to such a result is unthinkable. The result is there. It could not have been anything but a camouflage of learning which produced it, and if that method of

studying is a camouflage of sinister import, it must be abandoned and a more productive method must take its place. Never again can the world admit that education is occupation with the sciences after the German fashion. Never again can it put its trust in a blind ritualism of lectures, readings, and examinations, upon preordained subjects which are to be approached without consideration of consequences. The German attitude toward learning and the method which it employed are wrong. There is another method, the product of a wholly different attitude.

"In war," writes Ferdinand Foch, "there is but one manner of considering every question; that is the *objective manner*. War is not an art of pleasure or sport, indulged in without other reason as one might go in for painting, music, hunting, or tennis which can be taken up or stopped at will. In war everything is correlated. Every move has some reason, seeks some *object;* once that object is determined it decides the nature and the importance of the means to be employed. The *object* in every case is the answer to the question which faced Verdy du Vernois as he reached the field of battle at Nachod.

"Realizing the difficulties to be overcome, he seeks in vain through his memory for an example or a principle which will show him what to do. No inspiration comes. 'To the devil,' says he, 'with history and principles! After all, *what is my objective?*' And his mind is immediately made up. Such is the objective manner of handling a

problem. A move is considered in relation to the objective in the widest sense of the word: WHAT IS THE OBJECTIVE?

"This similar manner of considering questions and of understanding them causes a similar manner of action. But what follows is *an unrestricted application of every means to the objective sought.* The habit once formed of studying and acting on many specific cases, it will be instinctively and almost unconsciously that the work is done. Verdy du Vernois is an instance. 'To the devil,' says he, 'with history and principles,' yet he makes use of his knowledge of history and principles; without training along such lines, without the acquired habit of reasoning and deciding he would have been unable to face a difficult situation. . . .

"We must first understand truths and, therefore, have an open mind, without prejudice, ready-made ideas, or theories blindly accepted merely because they rest on tradition. One standard alone, that of reason. Then we must apply these truths to specific cases, on the map at first, on the ground later, the battlefield ultimately. Let us not look for similarities, let us not appeal to our memory, it would desert us at the first cannon shot, and let us avoid all charts or formulæ. We wish to reach the field with a trained power of judgment; it only needs to have us train it, to have us begin training it to-day. Let us for that purpose seek the reason of things; that will show us how to use them.

"It will be necessary, finally, to employ unconsciously some truths. For that purpose they

must be so familiar to us as to have entered into our bones, to be a component part of ourselves.

"Those are happy who are born believers, but they are not numerous. Neither is a man born learned or born muscular. Each one of us must build up his faith, his beliefs, his knowledge, his muscles. Results will not spring from any sudden revelation or light, as by a stroke of lightning. We can only attain them through a continued effort at understanding, at assimilation. Do not the simplest of arts make the same requirements? Who would expect to learn in a few moments or even in a few lessons, to ride, etc. . . .

"You will be asked later to be the brains of an army; I say unto you to-day: *Learn to think.* In the presence of every question considered independently and by itself ask yourself first: *What is the objective?* That is the first step toward the state of mind to be attained; that is the direction sought, purely objective."[1] These are the golden words of a master whose theory has met the pragmatic test.

The scientist works by objectives. He does not investigate in general. Francis Bacon's advice to him to collect facts and go on collecting facts until the dead weight of their identities or their differences revealed principles and laws has never been successfully applied. Nature answers the questions which men ask her. She makes no revelations to them who do not carefully frame the questions whose answer they seek. The process of scientific dis-

[1] Foch: "The Principles of War," translated by De Morinni, pp. 17, 18, 22, 23. The H. K. Fly Co., N. Y.

covery has been immensely fruitful because it has been preceded by painfully exact consideration of the kind of knowledge which is sought and the conditions which must be used to put the matter of the specific inquiry to the test. The broadside method of attack had to be abandoned before the real discoveries of a genuine science could begin.

The example of the inventor is equally directive. He does not look in general or search by wholesale. He starts with a problem, a fairly definite and concrete problem, and little by little he puzzles out its solution. Scientific management proceeds in the same fashion. We need a whole new literature of method to put these more refined, more fruitful ways of going to work at the disposal of every one.

The thing that America has learned about training is that it, too, must have an objective. The miracle which she has performed of putting a well-prepared and most effective fighting force of two million men into the trenches within eighteen months of her entry into the war is due to the fact that she took Lieutenant-Colonel Paul Azan's advice to heart and followed it. The old-time ritualistic training for war would have gotten her nowhere. The process had to be speeded up and it had to be made as definite as it could be. Schools were organized for intensive training in each of the different kinds of arms. Groups of French and English officers were sent to each cantonment: the English to train instructors in five specialties, the machine gun, the light trench mortar, the use of the bayonet, liquid fire and gas warfare, and sniping; the French to give instruction

in the use of artillery, the machine rifle, grenades, sapping, and liaison service. This instruction began at the top, the first consideration being to train military instructors who in turn trained the new officers, who in turn trained the men.

Any one who has been privileged to visit a ground school where prospective aviators are being prepared by a three months' course to enter the flying school will not soon forget how hard they work and what rapid progress they make in their studies. The mathematics and the mechanics of their craft, the assembling and care of their machines, the military lessons, and the physical training which they take are all speeded up to the highest pitch of intensity. There is no idling anywhere, and when free time comes on Saturday at noon the men on their own initiative form themselves into quiz classes and take refuge in the private rooms of the nearest hotel in order to go over together, in little groups, the work of the week which their instructors have just given them.

A system of instruction in rifle shooting developed by the Second Battalion, 14th U. S. Infantry, is based upon the conviction that every man can learn to shoot. It omits everything which is not essential to making the soldier a good shot. The preliminary training covers one week of intensive work. There are four distinct steps: first, sighting and aiming; second, positions; third, the trigger squeeze; fourth, rapid fire. Each step starts with a lecture and demonstrations by an instructor to the assembled command, but every individual who hears it must

understand each point which is made and explain it in his own words. Blank forms are supplied to each squad leader upon which the record of every man's proficiency in each of the essential points is kept. Exactness in details is demanded. "There is no such thing as a sight that is about right; it is either absolutely right or it is all wrong." The essentials of good shooting are three — correct aiming, correct position, correct trigger-squeeze. Rapid firing calls, in addition, for correct loading from the clip, correct working of the bolt, and the persistent keeping of the eye upon the target while working the bolt. A man who is learning to shoot must have a coach beside him to point out his errors. The coach must watch what the man does — the right eye of the man — not the target or "he might as well not be there at all." The course of instruction has two parts, the preparatory exercises and range practice. The handbook deals only with the preparatory exercises, "because this is the period of training during which the man learns everything necessary to become a good shot."

Another illustration of the method of training by immediate objectives I take from the experience of the Committee on Education and Special Training of the War Department in preparing men for the motor transport service of the United States army. The training which was given the motor transport personnel at first was subdivided into courses for mechanics, courses for repair men, and courses for drivers. This was found to be unsatisfactory be-

[1] "Individual Instruction in Rifle Practice," by Lieut.-Col. A. J. McNab, Jr., U. S. A. Cincinnati, Stewart & Kidd Co., 1918.

cause it did not produce the expert service which was demanded. A list of the most important mechanical occupations of the motor transport service in the order of their importance, as determined by the demand which the army made for men trained in them, was then compiled. It ran: Auto Driver, Truck Driver, Auto Repairer-General, Auto Repairer-Chassis, Auto Repairer-Engine Assembler, Auto Repairer-Axle and Transmission Assembler, Auto Repairer-Truck Body, Electrician-Magneto and Ignition Expert, Electrician-Automobile General, Tire Repairer-Rubber, Motorcycle Repairer Expert, Auto Repairer-Radiator, Auto Repairer-Carburetor, Wheelwright etc.

As trained specialists of these several kinds were urgently demanded, the schools which were endeavoring to train fighting mechanics were urged to specialize their courses, focusing the training of each man upon the particular service which he was to render. That did not mean that they were to endeavor to make him a narrow specialist. The man who knew more of ignition than of engine or rear axle assembling was not given instruction in ignition alone. He was given that, but in addition he was trained as a soldier and given a course in the origin and aims of the war; but his military training and his course in war aims were just as specific as his instruction in ignition was.

Illustrations might be multiplied indefinitely. One could take them from every branch and department of the army. They constitute indeed a new type of education. Even the college courses for Section

A of the Students' Army Training Corps were made over by the Committee on Education and given a form hardly less definite and specific than the instruction which it prescribed for the vocational training of the men of Section B. The improvement in method is significant. As a people we have made an experiment demonstrating the superiority of working by purposes to every other form of working — an educational experiment of such import that we can never go back to the old aimlessness of other days. Henceforth we are in a position to say with Verdy du Vernois whenever we are invited to study history, or literature, or languages, or mathematics, or science, or art, or philosophy, just as history, or literature, or language, or mathematics, or science or art, or philosophy, "To the devil with them! What is my objective?" That, after all, is the great lesson of the war. That is the thing which democracy is, life in pursuit of objectives; while autocracy, with all its works and trappings of which German education in whatever country it may have found an echo is one, is life without objectives, life arbitrarily determined, handed down, prearranged without reasons or purposes, life held in place by force, brute force, forever at war with intelligent human objectives.

There is need of reconstruction in American education to meet this requirement. It has not been a clear-sighted striving for definitely valuable objectives. It has hardly set before itself the object of training young people to use the humanly valuable activities about which books are written and studied.

It has been content if they learned from their text-books the definitions, descriptions, and rules which supplied a brief knowledge about these activities, but little or no knowledge of them. It has not thought of the study of physics as undertaken to teach folks how to take hold of, and lift and shove the material masses which they must move out of their way as they go about this planet. It has not regarded mathematics as a device for calculating strains and tensions, the curves of projectiles, and the course of ether waves. It has thought of it instead as a cross section of eternal truth. It has not concerned itself so much with the lessons of history as with the completeness of the record. It has studied literature as a painstaking research into minor matters rather than as an indispensable shaper of human loves and hates. It has studied language as illustrations of *philologie.* Civics or government was a pretty impersonal account of the arrangements which somehow or other had gotten themselves written down in books, rather than a vivid story of the efforts of the human herds which had produced them to live together by their means.

In short, the trouble with American education in the past has been its intellectualism. It has regarded knowledge as a description of reality, not as a guide to the shaping of reality. It has treated, or at least tended to treat, the human mind as a mirror of existence rather than an enginery of intentions, aims and purposes. In this great day when no existence, not even our own, is of concern to us save as it

aids or thwarts the intentions toward which we strive, we commit ourselves to a new philosophy. The gathering of descriptions, the amassing of facts, the acquiring of knowledge about the things which are, can not any longer be our main business. That is too indefinite a task, for existences are infinite and the getting of knowledge about them is a never-ending undertaking. We must have a principle by which to select the important from the unimportant. What things are essential? we ask. And the War Department answers by telling us what kind of French or German or English or mathematics or geography will help in the effort to augment the nation's strength. Shall we, when the war is over, go back to the old ritualism of studying French or German or English or mathematics or geography, merely as a tale that is told, or shall we continue to treat these studies as means to objectives? It is no more likely that education will ever again be the aimless series of rites that it formerly was than that agriculture or railroading or military science will forget the lessons of the war.

It is time, therefore, and high time, for an active reconstruction of the foundations of instruction. All schools must share in it. But upon the elementary schools the obligation is particularly heavy as they immediately concern the welfare of all. The emergency in education calls for monetary aid, for administrative improvements, for better schoolhouses, more days of instruction per year and larger numbers of trained teachers. Needed they all are, but the greatest need is the elimination of ritualistic

learning through the remaking of the studies which are taught in the schools. School teachers have been urged for years to omit the useless sections and the useless problems of arithmetic from their study of that subject. President Francis A. Walker of the Massachusetts Institute of Technology began that crusade in 1887. He declared that "a false arithmetic has grown up which has largely crowded out the place of the true arithmetic. . . . The most jagged fractions such as would hardly ever be found in actual business operations, *e.g.*, $\frac{11}{29}$ or $\frac{13}{27}$, are piled one on top of another, to produce an unreal and impossible difficulty; and the child, having been furnished with such an arithmetical monstrosity, is set to multiplying or dividing it by another 'compound and complex fraction' as unreal and ridiculous as itself. All this sort of thing in the teaching of young children is either useless or mischievous. . . . The charge I make against the existing course of study is that it is largely made up of exercises which are not exercises in arithmetic at all, or principally, but are exercises in logic, and, secondly, that as exercises in logic, these are either useless or mischievous. . . . Generally, if not universally, speaking, whatever in education is hard, is wrong." Many years have gone by since that reform began. Improvement has taken place here and there, but the arithmetic which is taught is still for the most part the traditional thing which Dr. Walker found so meaningless.

Improvement there has been, too, in the teaching of spelling, though it is not generally registered in

spelling books or found in the bulk of classes engaged in studying spelling. The prevailing notion seems still to be that children are taught to spell in order that they may know how to spell the words in the English language. That there are more words in the language than they can ever hope to master, and that they will have occasion in life to spell only a very few of them, does not seem to guide in the selection of the words which are included in their lessons. It ought to determine those lessons, for the question: What words do folks have occasion to spell when they write? has been submitted to very painstaking and fruitful investigation in recent years.

Our study of geography has left us woefully uninformed concerning many of the things which all of us should know if public opinion in the United States is to keep our national house in order. For example, Mexico is our neighbor and we must at least know enough of her to form an intelligent judgment of our country's duty in the several relations with her which arise. But how many of our people have a sufficient knowledge of Mexico to form an intelligent opinion about her? Perhaps one in ten thousand. We have a neighbor to the West, a great, proud, capable, and splendid neighbor. We must keep the peace and live in mutual helpfulness with her. But how many of our people know enough of Japan to maintain an informed opinion concerning her? It was the same with Germany, France, Italy, and even England, before the war. We did not know our neighbors, yet that knowledge is a matter of life or death to us. We study geography;

but we do not seem to pick out the facts which are presented with sufficient care. Because we do not organize our teaching, the children do not organize their learning. The net result is very disappointing. It is much the same with history, so much is taught and so little is chosen for its significance that little of value comes from that study. The National Security League believes, and has good reason to believe, that the teaching of civics should be reformed. It is experimenting to find out how that may be done. What is true of these studies is equally true of the twelve or thirteen other subjects which are taught in American elementary schools. They should be made over, reconstructed, in the light of the nation's new knowledge of what training is. Here and there, a teacher more discontented than his fellows, has for years been asking himself the questions: What is arithmetic for? Why do we study spelling? What is our aim in teaching civics? Why is American history taught? What is our uppermost purpose in teaching geography? The number of folks who have been forced by the persistence of their own active minds to find answers to these questions is not by any means so great as is the number which has asked them. They are the most profitable questions which teachers can ask, for, if we take them seriously enough, they will commit us to the view that teaching is not indeed the unwinding, link by link, of a chain which was forged in the past, but a purposive undertaking which proceeds or, rather, should proceed, only by clearly conceived objectives. Thinkers not a few have

known that all along. Their efforts to convert their fellows have been persistent. The literature which they have contributed is extensive, yet the new method of attack does not find general acceptance. Routinary aimlessness still obtains. The children go through the textbooks from cover to cover. They do not learn to distinguish the important from the less important and the relatively unimportant. Even though the course of study be written from the new standpoint and the reports of the Committee on the Economy of Time in Instruction pile up the reasons for rejecting much that the books contain, our practice lags far behind our theory. How can that difficulty be overcome?

There is, I believe, only one way. The teachers themselves must make the course of study. If any one else prepares it, they will not be able to make full use of it. If they prepare it themselves, it is their own plan of campaign which they can not disregard even though they find it difficult to carry it out. I know a group of superintendents of schools who decided a year ago, under the stress and stimulus of the time, that waste was as intolerable in schools as in kitchens or dining rooms, that they therefore would do what they could to take advantage of the universal eagerness for improvement and would make over the instruction in their schools so as to eliminate waste as completely as they could. They resolved to reconstruct the courses of study in the schools of their region and banded themselves together to do so. "Our object," they said, "is to attempt through the labors of a series of carefully selected committees to

clearly define the purpose which should regulate the teaching of each of the several elementary school studies, and in accordance with that purpose to reduce each of these studies to its lowest terms by eliminating all lessons and parts of lessons which do not specifically contribute to that purpose, and to study the best ways and means of attaining that purpose in the teaching of each subject." They created a series of committees, one to examine and report upon each of the studies in the elementary course. Each superintendent appointed the best teacher, or the best two or three teachers of that subject in his company to work on that committee. When they came together there were some eighteen committees with ten or more members each. The superintendents said to them: "We have called you together to ask you to study and to answer four questions which vitally affect the schools of this state. The first question is: What is your subject for? What is its aim? What is its purpose? The second question, which must be answered in the light of the first, is: What are the essentials of your subject? What parts of it are of first-rate importance, as distinguished from the aspects of it which are only of second-rate or third-rate value? We want you to skeletonize your subject so that we shall have a course of study which will be made up of minimum essentials. These two questions we want you to answer in your first report. The question, how a subject shall be taught, ought not to determine what should be taught. Subjects should be taught for other reasons than the traditional

demands of pedagogical method. After you have decided why your several subjects should be taught and what parts of them are essential to that objective, you will next undertake to answer a third question: What in the light of its purpose and of its content is the best method to teach your subject? And, fourth: What tests are there by which you can determine whether or not it is being mastered successfully?"

These committees of working teachers were urged to master the literature which deals with the aims, essentials, and methods of their subject. Their fellow teachers in their group of schools collaborated with them. The committees met at intervals throughout the year. Each committee presented its answers to the first two questions. These reports were studied, line by line, by the superintendents and referred back to the committees for revision. That work is still going on, but already a new spirit has entered the schools of their part of the state. Education by objectives has taken the place of education by meaningless routine. So confident are the superintendents of the cities which the committees represent that results of value are coming from their deliberations, that they have formed themselves into a league of school systems to use the committee-made course of study and henceforth to conduct their common business coöperatively.

Man is a working animal. He works instinctively and by habit. Usually he perceives the meaning of his work only dimly. He is but one of many in a great enterprise, and the service which that enter-

prise renders he finds somewhat too remote to be clearly imaged. It is only in moments of great stress, like the present, that he is able to exchange his blind fidelities for conscious awareness of aims and reasons. While the stress endures, he can live purposively. When it is over he may sink down into a humdrum existence again. But education should never be a humdrum matter. It is its privilege always to be concerned with aims and to proceed at every step by objectives. The reorganization of which we have spoken is only a beginning. There must be a reason why young people should study arithmetic and geography and history. That reason, if we could find it, would tell us at once what arithmetic and geography and history they should study and would tell us quite as conclusively how they should study it. Our first duty, therefore, is to study our aim in teaching each of the subjects which we invite the young to study. But having found what our aim is, we have made only a beginning. Just as certainly as we teach geography for one purpose and history for another, just so certainly should our aim in teaching to-day's lesson in geography be different from our aim in teaching to-morrow's lesson. In genuine learning there is no such thing as mere repetition. There must be something new to be done each day, some new point to be attacked, some new objective to be reached. Children are no more content than adults to mark time. Their active nature longs to go forward, to add to-day's conquest to yesterday's gain. They are content to study English or geography or history for years

provided that each day's English or geography or history be not an aimless rehashing of that which was studied yesterday or last week or last year. Now, most of our courses of study do not provide specific lessons which offer daily gains. They invite us to take the same subject over and over again until we have attained a kind of routine familiarity with it instead of planning our attack upon it so that we master first this aspect of it, then that, then the other, and in due course have mastered all. Education by immediate objectives will set a new problem for each day. It will break up each subject of instruction into its constituent parts and arrange those parts in a progressive series. It will begin with a discussion of what it is that the student is to learn to do in his studying of that particular subject. It will next inform him what it is he is to learn to do in connection with each of its grand divisions. When the ground has been properly charted, he will be invited to begin a series of daily doings each different from that which preceded it and each sufficiently exacting to impart the sense of a new undertaking as he contemplates it and a new accomplishment as he leaves it to take up the next day's problem. Only by seeing to it that each lesson provides its unique demand for skill, calls forth a new effort and means a step forward, can desultory school work with its motivation-destroying and interest-killing effects be banished. Only immediate objectives make intensive training possible. Going forward twenty lines in advance in translation or fifty map questions or a dozen examples is humdrum

work, but looking forward to a new argument to be untangled, a new country to be examined, or a new principle to be applied, offers opportunity to show one's strength and to add to one's achievement.

Let no one object that this method of specific attack applies only to practical studies. It applies to all studies which have any definite lessons for the young or for the old to learn. It banishes nothing which has either organized or organizable worth from any curriculum. It banishes subject worship and the practice of keeping just any kind of company with studies, and substitutes, for the slothfulness of believing that so long as we are in their presence a certain portion of our waking lives that somehow or other they will do us good, the conviction that it is what we learn to do with them, rather than what they do to us, that counts.

There is one other corollary. With intensive labor, wasted years are saved. Not only is the work of education better done and the student better trained, but the long-drawn-out process is shortened. The finality of the time standard as a measure of education was discredited for all coming days when an American army, prepared in one year, destroyed the military prowess which Germany had labored for fifty years to attain. "They are men," said Ferdinand Foch, their Commander-in-Chief, "who do not know fear but know obedience, and are led by officers who may be counted upon." Is it not possible, while the methods of this huge world-convincing experiment are fresh in our minds, to apply its lesson in some measure to the condensation

of the over-long training for peace? By a reduction of studies to their essentials, and by the adoption of learning by immediate objectives, could we not reduce our present nineteen or twenty-year-long programs by as much as four years? We shall be poorer when this war is over, poorer to the end of our days and the whole world poorer with us, because of this adventure for world empire of the Hohenzollern family. The young men from whose ranks were to come the intellectual leaders, the engineers, the physicians, the teachers, the statesmen, the producers, the manufacturers, the master workmen, will not return in such numbers as they went forth. The schools will have to work harder to train others to fill their places and in addition they will have to train all more diligently for the larger life of service which our nation has taken upon itself. It is unlikely that they can perform their part in the world's reconstruction unless they are in session forty-eight weeks of each year instead of thirty-six, as hitherto. The time has come to use the educational plants of the country to capacity. Allowing them to stand idle for one-fourth of the year is not working them to their limit of usefulness. With proper health supervision, only such students as are physically able to profit by four terms of school work a year would be allowed to take it; but, on the other hand, the school which gives due attention to the physical welfare of its students will bring them through a year of continuous work in better condition than they now are in at the end of thirty-six weeks of school work and a long vacation

of somewhat too profitless idleness in which they lack well-motivated occupation and the guidance and watchfulness of their elders. The continuous session school will be able to provide more time for playground activities and perhaps for weekly excursions. It need not be as much of a constraining influence in young lives as schools have sometimes been.

It seems unlikely that in the days after the war the school system will be content to offer the fullest opportunity of training to but a small part of the youth of the land. The war has shown us that what the country needs is not more theoretically trained men or more practically trained men, not more engineers and more workmen to carry out their ideas, but more master-mechanics who know the theory of their craft as well as the technique which that theory should control and direct. Labor, it is clear, is coming to its own throughout the world. It will have a larger share in the necessities and the comforts which life requires, but it will have new responsibilities. The worker and the worker's children must be fitted to bear them. Trained they must be in craftsmanship and trained as well to civic coöperativeness. On the other hand, the problems of production are put by a thoughtful employer[1] in this order:

1. Education.
2. The application of science to industry.
3. The elimination of waste.
4. The disposal of the product.
5. Wages.
6. Profits.

[1] Mr. Ernest J. P. Benn, Managing Director of Benn Brothers, Ltd., in Carter's "Industrial Reconstruction." E. P. Dutton & Co.

Those who speculate concerning the future look forward with much confidence to the upbuilding of world-wide unity of desire and endeavor. The food shortage, which will perhaps exist for some years, will require the land to be scientifically treated. An enormous work of repairing roads, railroads, factories, cities, and whole countries must be pushed forward. Increased production must, if it can be made to do so, pay the annual increments of the huge war debt. Greater efficiency, through larger scientific skill, will be required in all industries. Coöperation will be the universal objective. Capital and labor will develop greater mutuality of consideration than in the past. The freedom which men by millions have died for will yield the abiding fellowship which their devoted fellowship in service planted. The heroic age of our American people will not soon come to a close. For Thou, my country, art that puissant nation of Milton's vision and "the main purport of These States is to found a superb friendship, exalté, previously unknown."

APPENDIX

Education Act, 1918.

[8 & 9 Geo. 5. Ch. 39.]

ARRANGEMENT OF SECTIONS. A.D. 1918.

National System of Public Education.

Section.

1. Progressive and comprehensive organisation of education.
2. Development of education in public elementary schools.
3. Establishment of continuation schools.
4. Preparation and submission of schemes.
5. Approval of schemes by Board of Education.
6. Provisions as to co-operation and combination.
7. Provision as to amount of expenditure for education.

Attendance at School and Employment of Children and Young Persons.

8. Provisions as to attendance at elementary schools.
9. Provisions for avoidance of broken school terms.
10. Compulsory attendance at continuation schools.
11. Enforcement of attendance at continuation schools.
12. Administrative provisions relating to continuation schools.
13. Amendment of 3 Edw. 7. c. 45 and 4 Edw. 7. c. 15.
14. Prohibition against employment of children in factories, workshops, mines, and quarries.
15. Further restrictions on employment of children.
16. Penalties on illegal employment of children and young persons.

Extension of Powers and Duties.

17. Power to promote social and physical training.
18. Medical inspection of schools and educational institutions.
19. Nursery schools.
20. Education of physically defective and epileptic children.
21. Powers for the education of children in exceptional circumstances.

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22. Amendment of Education (Choice of Employment) Act, 1910.
23. Power to aid research.
24. Provision of maintenance allowances.
25. Provisions as to medical treatment.

Abolition of Fees in Public Elementary Schools.

26. Abolition of fees in public elementary schools.

Administrative Provisions.

27. Voluntary inspection of schools.
28. Collection of information respecting schools.
29. Provisions with respect to appointment of certain classes of teachers.
30. Provisions as to closing of schools.
31. Grouping of non-provided schools of the same denominational character.
32. Provisions relating to central schools and classes.
33. Saving for certain statutory provisions.
34. Acquisition of land by local education authority.
35. Power to provide elementary schools outside area.
36. Amendments with respect to the allocation of expenses to particular areas.
37. Provisions as to expenses of Provisional Orders, &c.
38. Expenses of education meetings, conferences, &c.
39. Power to pay expenses of prosecution for cruelty.
40. Public inquiries by Board of Education.
41. Inspection of minutes.
42. Payments to the Central Welsh Board.
43. Evidence of certificates, &c. issued by local education authorities.

Education Grants.

44. Education grants.

Educational Trusts.

45. Power to constitute official trustees of educational trust property.

Section.
46. Exemption of assurance of property for educational purposes from certain restrictions under the Mortmain Acts.
47. Appointment of new trustees under scheme.

General.

48. Definitions.
49. Compensation to existing officers.
50. Extension of certain provisions of the Education Acts.
51. Repeals.
52. Short title, construction, extent, and commencement.

SCHEDULES.

CHAPTER 39.

An Act to make further provision with respect to Education in England and Wales and for purposes connected therewith. [8th August 1918.]

BE it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows: —

National System of Public Education.

Progressive and comprehensive organisation of education.

1. With a view to the establishment of a national system of public education available for all persons capable of profiting thereby, it shall be the duty of the council of every county and county borough, so far as their powers extend, to contribute thereto by providing for the progressive development and comprehensive organisation of education in respect of their area, and with that object any such council from time to time may, and shall when required by the Board of Education, submit to the Board schemes showing the mode in which their duties and powers under the Education Acts are to be performed and exercised, whether separately or in co-operation with other authorities.

Development of education in public elementary schools. 2 Edw. 7. c. 42.

2. — (1) It shall be the duty of a local education authority so to exercise their powers under Part III. of the Education Act, 1902, as —

(*a*) to make, or otherwise to secure, adequate and suitable provision by means of central schools, central or special classes, or otherwise —

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(i) for including in the curriculum of public elementary schools, at appropriate stages, practical instruction suitable to the ages, abilities, and requirements of the children; and

(ii) for organising in public elementary schools courses of advanced instruction for the older or more intelligent children in attendance at such schools, including children who stay at such schools beyond the age of fourteen;

(*b*) to make, or otherwise to secure, adequate and suitable arrangements under the provisions of paragraph (*b*) of subsection (1) of section thirteen of the Education (Administrative Provisions) Act, 1907, for attending to the health and physical condition of children educated in public elementary schools; and

7 Edw. 7. c. 43.

(*c*) to make, or otherwise to secure, adequate and suitable arrangements for co-operating with local education authorities for the purposes of Part II. of the Education Act, 1902, in matters of common interest, and particularly in respect of —

(i) the preparation of children for further education in schools other than elementary, and their transference at suitable ages to such schools; and

(ii) the supply and training of teachers;

and any such authority from time to time may, and shall when required by the Board of Education, submit to the Board schemes for the exercise of their powers as an authority for the purposes of Part III. of the Education Act, 1902.

33 & 34 Vict. c. 75.

(2) So much of the definition of the term "elementary school" in section three of the Elementary Education Act, 1870, as requires that elementary education shall be the principal part of the education there given, shall not apply to such courses of advanced instruction as aforesaid.

Establishment of continuation schools.

3. — (1) It shall be the duty of the local education authority for the purposes of Part II. of the Education Act, 1902, either separately or in co-operation with other local education authorities, to establish and maintain, or secure the establishment and maintenance under their control

and direction, of a sufficient supply of continuation schools in which suitable courses of study, instruction, and physical training are provided without payment of fees for all young persons resident in their area who are, under this Act, under an obligation to attend such schools.

(2) For the purposes aforesaid the local education authority from time to time may, and shall when required by the Board of Education, submit to the Board schemes for the progressive organisation of a system of continuation schools, and for securing general and regular attendance thereat, and in preparing schemes under this section the local education authority shall have regard to the desirability of including therein arrangements for co-operation with universities in the provision of lectures and classes for scholars for whom instruction by such means is suitable.

(3) The council of any county shall, if practicable, provide for the inclusion of representatives of education authorities for the purposes of Part III. of the Education Act, 1902, in any body of managers of continuation schools within the area of those authorities.

Preparation and submission of schemes.

4. — (1) The council of any county, before submitting a scheme under this Act, shall consult the other authorities within their county (if any) who are authorities for the purposes of Part III. of the Education Act, 1902, with reference to the mode in which and the extent to which any such authority will co-operate with the council in carrying out their scheme, and when submitting their scheme shall make a report to the Board of Education as to the co-operation which is to be anticipated from any such authority, and any such authority may, if they so desire, submit to the Board as well as to the council of the county any proposals or representations relating to the provision or organisation of education in the area of that authority for consideration in connection with the scheme of the county.

(2) Before submitting schemes under this Act a local education authority shall consider any representations made to them by parents or other persons or bodies of persons interested, and shall adopt such measures to ascertain their views as they consider desirable, and the authority shall take such steps to give publicity to their proposals

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as they consider suitable, or as the Board of Education may require.

(3) A local education authority in preparing schemes under this Act shall have regard to any existing supply of efficient and suitable schools or colleges not provided by local education authorities, and to any proposals to provide such schools or colleges.

(4) In schemes under this Act adequate provision shall be made in order to secure that children and young persons shall not be debarred from receiving the benefits of any form of education by which they are capable of profiting through inability to pay fees.

Approval of schemes by Board of Education.

5. — (1) The Board of Education may approve any scheme (which term shall include an interim, provisional, or amending scheme) submitted to them under this Act by a local education authority, and thereupon it shall be the duty of the local education authority to give effect to the scheme.

(2) If the Board of Education are of opinion that a scheme does not make adequate provision in respect of all or any of the purposes to which the scheme relates, and the Board are unable to agree with the authority as to what amendments should be made in the scheme, they shall offer to hold a conference with the representatives of the authority and, if requested by the authority, shall hold a public inquiry in the matter.

(3) If thereafter the Board of Education disapprove a scheme, they shall notify the authority, and, if within one month after such notification an agreement is not reached, they shall lay before Parliament the report of the public inquiry (if any) together with a report stating their reasons for such disapproval and any action which they intend to take in consequence thereof by way of withholding or reducing any grants payable to the authority.

Provisions as to co-operation and combination.

6. — (1) For the purpose of performing any duty or exercising any power under the Education Acts, a council having powers under those Acts may enter into such arrangements as they think proper for co-operation or combination with any other council or councils having such powers, and any such arrangement may provide for the

appointment of a joint committee or a joint body of managers, for the delegation to that committee or body of managers of any powers or duties of the councils (other than the power of raising a rate or borrowing money), for the proportion of contributions to be paid by each council, and for any other matters which appear necessary for carrying out the arrangement.

(2) The Board of Education may, on the application of two or more councils having powers under the Education Acts, by scheme provide for the establishment and (if thought fit) the incorporation of a federation for such purposes of any such arrangements as aforesaid as may be specified in the scheme as being purposes relating to matters of common interest concerning education which it is necessary or convenient to consider in relation to areas larger than those of individual education authorities, and the powers conferred on councils by this section shall include power to arrange for the performance of any educational or administrative functions by such a federation as if it were a joint committee or a joint body of managers:

Provided that no council shall without its consent be included in a scheme establishing a federation, and no council shall be obliged to continue in a federation except in accordance with the provisions of a scheme to which it has consented.

(3) A scheme made by the Board of Education constituting a federation, and an arrangement establishing a joint committee or a joint body of managers, shall provide for the appointment of at least two-thirds of the members by councils having powers under the Education Acts, and may provide either directly or by co-optation for the inclusion of teachers or other persons of experience in education and of representatives of universities or other bodies.

(4) A scheme constituting a federation may on the application of one or more of the councils concerned be modified or repealed by a further scheme, and, where a scheme provides for the discontinuance of a federation, provision may be made for dealing with any property or liabilities of the federation.

(5) Where any arrangement under this section provides for the payment of an annual contribution by one council

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to another, the contribution shall, for the purposes of section nineteen of the Education Act, 1902, form part of the security on which money may be borrowed under that section.

Provision as to amount of expenditure for education.

7. The limit under section two of the Education Act, 1902, on the amount to be raised by the council of a county out of rates for the purpose of education other than elementary shall cease to have effect.

Attendance at School and Employment of Children and Young Persons.

Provisions as to attendance at elementary schools.

8. — (1) Subject as provided in this Act, no exemption from attendance at school shall be granted to any child between the ages of five and fourteen years, and any enactment giving a power, or imposing a duty, to provide for any such exemption, and any provision of a byelaw providing for any such exemption, shall cease to have effect, without prejudice to any exemptions already granted. Any byelaw which names a lower age than fourteen as the age up to which a parent shall cause his child to attend school shall have effect as if the age of fourteen were substituted for that lower age.

63 & 64 Vict. c. 53.

(2) In section seventy-four of the Elementary Education Act, 1870, as amended by section six of the Elementary Education Act, 1900, fifteen years shall be substituted for fourteen years as the maximum age up to which byelaws relating to school attendance may require parents to cause their children to attend school, and any such byelaw requiring attendance at school of children between the ages of fourteen and fifteen may apply either generally to all such children, or to children other than those employed in any specified occupations:

Provided that it shall be lawful for a local education authority to grant exemption from the obligation to attend school to individual children between the ages of fourteen and fifteen for such time and upon such conditions as the authority think fit in any case where after due inquiry the circumstances seem to justify such an exemption.

(3) It shall not be a defence to proceedings relating to school attendance under the Education Acts or any byelaws made thereunder that a child is attending a school or

institution providing efficient elementary instruction unless the school or institution is open to inspection either by the local education authority or by the Board of Education, and unless satisfactory registers are kept of the attendance of the scholars thereat. A.D. 1918.

(4) A local education authority may with the approval of the Board of Education make a byelaw under section seventy-four of the Elementary Education Act, 1870, providing that parents shall not be required to cause their children to attend school or to receive efficient elementary instruction in reading, writing, and arithmetic before the age of six years:

Provided that in considering any such byelaw the Board shall have regard to the adequacy of the provision of nursery schools for the area to which the byelaw relates, and shall, if requested by any ten parents of children attending public elementary schools for that area, hold a public inquiry for the purpose of determining whether the byelaw should be approved.

(5) Notwithstanding anything in the Education Acts the Board of Education may, on the application of the local education authority, authorise the instruction of children in public elementary schools till the end of the school term in which they reach the age of sixteen or (in special circumstances) such later age as appears to the Board desirable:

Provided that, in considering such application, the Board shall have regard to the adequacy and suitability of the arrangements made by the authority under paragraphs (*a*) and (*c*) of subsection (1) of section two of this Act and to the effective development and organisation of all forms of education in the area, and to any representations made by the managers of schools.

(6) The power of a local education authority under section seven of the Education Act, 1902, to give directions as to secular instruction shall include the power to direct that any child in attendance at a public elementary school shall attend during such hours as may be directed by the authority at any class, whether conducted on the school premises or not, for the purpose of practical or special in-

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struction or demonstration, and attendance at such a class shall, where the local education authority so direct, be deemed for the purpose of any enactment or byelaw relating to school attendance to be attendance at a public elementary school:

Provided that, if by reason of any such direction a child is prevented on any day from receiving religious instruction in the school at the ordinary time mentioned in the time-table, reasonable facilities shall be afforded, subject to the provisions of section seven of the Elementary Education Act, 1870, for enabling such child to receive religious instruction in the school at some other time.

39 & 40 Vict. c. 79.

(7) In section eleven of the Elementary Education Act, 1876, (which relates to school attendance) for the words "there is not within two miles" there shall be substituted the words "there is not within such distance as may be prescribed by the byelaws."

56 & 57 Vict. c. 42.

(8) Nothing in this section shall affect the provisions of the Elementary Education (Blind and Deaf Children) Act, 1893, or the Elementary Education (Defective and Epileptic Children) Acts, 1899 to 1914, relating to the attendance at school of the children to whom those Acts apply.

Provisions for avoidance of broken school terms.

9. — (1) If a child who is attending or is about to attend a public elementary school or a school certified by the Board of Education under the Elementary Education (Blind and Deaf Children) Act, 1893, or the Elementary Education (Defective and Epileptic Children) Acts, 1899 to 1914, attains any year of age during the school term, the child shall not, for the purpose of any enactment or byelaw, whether made before or after the passing of this Act, relating to school attendance, be deemed to have attained that year of age until the end of the term.

(2) The local education authority for the purposes of Part III. of the Education Act, 1902, may make regulations with the approval of the Board of Education providing that a child may, in such cases as are prescribed by the regulations, be refused admission to a public elementary school or such certified school as aforesaid except at the commencement of a school term.

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Compulsory attendance at continuation schools.

10. — (1) Subject as hereinafter provided, all young persons shall attend such continuation schools at such times, on such days, as the local education authority of the area in which they reside may require, for three hundred and twenty hours in each year, distributed as regards times and seasons as may best suit the circumstances of each locality, or, in the case of a period of less than a year, for such number of hours distributed as aforesaid as the local education authority, having regard to all the circumstances, consider reasonable:

Provided that —

(*a*) the obligation to attend continuation schools shall not, within a period of seven years from the appointed day on which the provisions of this section come into force, apply to young persons between the ages of sixteen and eighteen, nor after that period to any young person who has attained the age of sixteen before the expiration of that period; and

(*b*) during the like period, if the local education authority so resolve, the number of hours for which a young person may be required to attend continuation schools in any year shall be two hundred and eighty instead of three hundred and twenty.

(2) Any young person —

(i) who is above the age of fourteen years on the appointed day; or

(ii) who has satisfactorily completed a course of training for, and is engaged in, the sea service, in accordance with the provisions of any national scheme which may hereafter be established, by Order in Council or otherwise, with the object of maintaining an adequate supply of well-trained British seamen, or, pending the establishment of such scheme, in accordance with the provisions of any interim scheme approved by the Board of Education; or

(iii) who is above the age of sixteen years and either—

(*a*) has passed the matriculation examination of a university of the United Kingdom or

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an examination recognised by the Board of Education for the purposes of this section as equivalent thereto; or

(*b*) is shown to the satisfaction of the local education authority to have been up to the age of sixteen under full-time instruction in a school recognised by the Board of Education as efficient or under suitable and efficient full-time instruction in some other manner,

shall be exempt from the obligation to attend continuation schools under this Act unless he has informed the authority in writing of his desire to attend such schools and the authority have prescribed what school he shall attend.

(3) The obligation to attend continuation schools under this Act shall not apply to any young person —

(i) who is shown to the satisfaction of the local education authority to be under full-time instruction in a school recognised by the Board of Education as efficient or to be under suitable and efficient full-time instruction in some other manner; or

(ii) who is shown to the satisfaction of the local education authority to be under suitable and efficient part-time instruction in some other manner for a number of hours in the year (being hours during which if not exempted he might be required to attend continuation schools) equal to the number of hours during which a young person is required under this Act to attend a continuation school.

(4) Where a school supplying secondary education is inspected by a British university, or in Wales or Monmouthshire by the Central Welsh Board, under regulations made by the inspecting body after consultation with the Board of Education, and the inspecting body reports to the Board of Education that the school makes satisfactory provision for the education of the scholars, a young person who is attending, or has attended, such a school shall for the purposes of this section be treated as if he were attending, or had attended, a school recognised by the Board of Education as efficient.

(5) If a young person who is or has been in any school or educational institution, or the parent of any such young

person, represents to the Board that the young person is entitled to exemption under the provisions of this section, or that the obligation imposed by this section does not apply to him, by reason that he is or has been under suitable and efficient instruction, but that the local education authority have unreasonably refused to accept the instruction as satisfactory, the Board of Education shall consider the representation, and, if satisfied that the representation is well founded, shall make an order declaring that the young person is exempt from the obligation to attend a continuation school under this Act for such period and subject to such conditions as may be named in the order:

Provided that the Board of Education may refuse to consider any such representation unless the local education authority or the Board of Education are enabled to inspect the school or educational institution in which the instruction is or has been given.

(6) The local education authority may require, in the case of any young person who is under an obligation to attend a continuation school, that his employment shall be suspended on any day when his attendance is required, not only during the period for which he is required to attend the school, but also for such other specified part of the day, not exceeding two hours, as the authority consider necessary in order to secure that he may be in a fit mental and bodily condition to receive full benefit from attendance at the school: Provided that, if any question arises between the local education authority and the employer of a young person whether a requirement made under this subsection is reasonable for the purposes aforesaid, that question shall be determined by the Board of Education, and, if the Board of Education determine that the requirement is unreasonable, they may substitute such other requirement as they think reasonable.

(7) The local education authority shall not require any young person to attend a continuation school on a Sunday, or on any day or part of a day exclusively set apart for religious observance by the religious body to which he belongs, or during any holiday or half-holiday to which by any enactment regulating his employment or by agreement he is entitled, nor so far as practicable during any

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holiday or half-holiday which in his employment he is accustomed to enjoy, nor between the hours of seven in the evening and eight in the morning: Provided that the local education authority may, with the approval of the Board, vary those hours in the case of young persons employed at night or otherwise employed at abnormal times.

(8) A local education authority shall not, without the consent of a young person, require him to attend any continuation school held at or in connection with the place of his employment. The consent given by a young person for the purpose of this provision may be withdrawn by one month's notice in writing sent to the employer and to the local education authority.

Any school attended by a young person at or in connection with the place of his employment shall be open to inspection either by the local education authority or by the Board of Education at the option of the person or persons responsible for the management of the school.

(9) In considering what continuation school a young person shall be required to attend a local education authority shall have regard, as far as practicable, to any preference which a young person or the parent of a young person under the age of sixteen may express, and, if a young person or the parent of a young person under the age of sixteen represents in writing to the local education authority that he objects to any part of the instruction given in the continuation school which the young person is required to attend, on the ground that it is contrary or offensive to his religious belief, the obligation under this Act to attend that school for the purpose of such instruction shall not apply to him, and the local education authority shall, if practicable, arrange for him to attend some other instruction in lieu thereof or some other school.

Enforcement of attendance at continuation schools.

11. — (1) If a young person fails, except by reason of sickness or other unavoidable cause, to comply with any requirement imposed upon him under this Act for attendance at a continuation school, he shall be liable on summary conviction to a fine not exceeding five shillings, or, in the case of a second or subsequent offence, to a fine not exceeding one pound.

(2) If a parent of a young person has conduced to or connived at the failure on the part of the young person to attend a continuation school as required under this Act, he shall, unless an order has been made against him in respect of such failure under section ninety-nine of the Children Act, 1908, be liable on summary conviction to a fine not exceeding two pounds, or, in the case of a second or subsequent offence, whether relating to the same or another young person, to a fine not exceeding five pounds.

Administrative provisions relating to continuation schools.

12. — (1) The Board of Education may from time to time make regulations prescribing the manner and form in which notice is to be given as to the continuation school (if any) which a young person is required to attend, and the times of attendance thereat, and as to the hours during which his employment must be suspended, and providing for the issue of certificates of age, attendance and exemption, and for the keeping and preservation of registers of attendance, and generally for carrying into effect the provisions of this Act relating to continuation schools.

(2) For the purposes of the provisions of this Act relating to continuation schools, the expression "year" means in the case of any young person the period of twelve months reckoned from the date when he ceased to be a child, or any subsequent period of twelve months.

Amendment of 3 Edw. 7. c. 45. & 4 Edw. 7. c. 15.

13. — (1) The Employment of Children Act, 1903, so far as it relates to England and Wales, shall be amended as follows: —

(i) For subsection (1) of section three the following subsection shall be substituted: —

"A child under the age of twelve shall not be employed; and a child of the age of twelve or upwards shall not be employed on any Sunday for more than two hours, or on any day on which he is required to attend school before the close of school hours on that day, nor on any day before six o'clock in the morning or after eight o'clock in the evening:

"Provided that a local authority may make a byelaw permitting, with respect to such occupations as may be specified, and subject to such

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conditions as may be necessary to safeguard the interests of the children, the employment of children of the age of twelve or upwards before school hours and the employment of children by their parents, but so that any employment permitted by byelaw on a school day before nine in the morning shall be limited to one hour, and that if a child is so employed before nine in the morning he shall not be employed for more than one hour in the afternoon."

(ii) In subsection (2) of section three, which prohibits the employment of a child under the age of eleven years in street trading, the words "under the age of eleven years" shall be repealed:

(iii) For section twelve the following section shall be substituted: —

"Except as regards the City of London, the powers and duties of a local authority under this Act shall be deemed to be powers and duties under Part III. of the Education Act, 1902, and the provisions of the Education Acts for the time being in force with regard to those powers and duties and as to the manner in which the expenses of an authority under that Part of that Act shall be paid shall apply accordingly":

(iv) For the definition of the expression "local authority" there shall be substituted the following definition: —

"The expression 'local authority' means in the case of the City of London the mayor, aldermen, and commons of that city in common council assembled and elsewhere the local education authority for the purposes of Part III. of the Education Act, 1902."

(2) The Prevention of Cruelty to Children Act, 1904, so far as it relates to England and Wales, shall be amended as follows: —

(i) In paragraph (*b*) of section two, which restricts the employment of boys under the age of fourteen years and of girls under the age of sixteen years

for the purpose of singing, playing or performing, or being exhibited for profit, or offering anything for sale, between nine P.M. and six A.M., "eight P.M." shall be substituted for "nine P.M." so far as relates to children under fourteen years of age:

(ii) In paragraph (*c*) of section two, which restricts the employment of children under eleven years for the purpose of singing, playing or performing, or being exhibited for profit, or offering anything for sale, twelve years shall be substituted for eleven years:

(iii) In section three, which relates to licences for the employment of children exceeding ten years of age, the age of twelve years shall be substituted for the age of ten years:

(iv) A licence under section three to take part in any entertainment or series of entertainments, instead of being granted, varied, added to, or rescinded as provided by that section, shall be granted by the local education authority for the purposes of Part III. of the Education Act, 1902, of the area in which the child resides, subject to such restrictions and conditions as are prescribed by rules made by the Board of Education, and may be rescinded by the authority of any area in which it takes effect or is about to take effect if the restrictions and conditions of the licence are not observed, and, subject as aforesaid, may be varied or added to by that authority at the request of the holder of the licence:

(v) The holder of a licence shall at least seven days before a child takes part in any entertainment or series of entertainments furnish the local education authority of the area in which the entertainment is to take place with particulars of the licence and such other information as the Board of Education may by rules prescribe, and if he fails to furnish such particulars and information as aforesaid he shall be liable on summary conviction to a fine not exceeding five pounds:

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(vi) Subsections (3) and (4) of section three shall cease to apply with respect to licences to take part in an entertainment or series of entertainments:

(vii) If the applicant for a licence or a person to whom a licence has been granted feels aggrieved by any decision of a local education authority, he may appeal to the Board of Education, who may thereupon exercise any of the powers conferred on the local education authority by this section:

(viii) The provisions of this subsection shall not apply to any licence in force on the appointed day:

(ix) References to the Employment of Children Act, 1903, shall be construed as references to that Act as amended by this Act.

Prohibition against employment of children in factories, workshops, mines, and quarries. 1 & 2 Geo. 5. c. 50. 35 & 36 Vict. c. 77. 38 & 39 Vict. c. 39.

14. No child within the meaning of this Act shall be employed —

(*a*) in any factory or workshop to which the Factory and Workshop Acts, 1901 to 1911, apply; or

(*b*) in any mine to which the Coal Mines Act, 1911, applies; or

(*c*) in any mine or quarry to which the Metalliferous Mines Acts, 1872 and 1875, apply;

unless lawfully so employed on the appointed day; and those Acts respectively shall have effect as respects England and Wales as if this provision, so far as it relates to the subject-matter thereof, was incorporated therewith.

Further restrictions on employment of children.

15. — (1) The local education authority, if they are satisfied by a report of the school medical officer or otherwise that any child is being employed in such a manner as to be prejudicial to his health or physical development, or to render him unfit to obtain the proper benefit from his education, may either prohibit, or attach such conditions as they think fit to, his employment in that or any other manner, notwithstanding that the employment may be authorised under the other provisions of this Act or any other enactment.

(2) It shall be the duty of the employer and the parent of any child who is in employment, if required by the local education authority, to furnish to the authority such information as to his employment as the authority may require,

and, if the parent or employer fails to comply with any requirement of the local education authority or wilfully gives false information as to the employment, he shall be liable on summary conviction to a fine not exceeding forty shillings.

Penalties on illegal employment of children and young persons.

16. If any person —

(*a*) employs a child in such a manner as to prevent the child from attending school according to the Education Acts and the byelaws in force in the district in which the child resides; or

(*b*) having received notice of any prohibition or restriction as to the employment of a child issued by a local education authority under this Act, employs a child in such a manner as to contravene the prohibition or restriction; or

(*c*) employs a young person in such a manner as to prevent the young person attending a continuation school which he is required to attend under this Act; or

(*d*) employs a young person at any time when, in pursuance of any requirement under this Act issued by a local education authority, the employment of that young person must be suspended;

he shall be deemed to have employed the child or young person in contravention of the Employment of Children Act, 1903, and subsections (1) and (2) of section five and section six and section eight of that Act shall apply accordingly as if they were herein re-enacted and in terms made applicable to children and young persons within the meaning of this Act as well as to children within the meaning of that Act.

Extension of Powers and Duties.

Power to promote social and physical training.

17. For the purpose of supplementing and reinforcing the instruction and social and physical training provided by the public system of education, and without prejudice to any other powers, a local education authority for the purposes of Part III. of the Education Act, 1902, as respects children attending public elementary schools, and a local

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education authority for the purposes of Part II. of that Act as respects other children and young persons and persons over the age of eighteen attending educational institutions, may, with the approval of the Board of Education, make arrangements to supply or maintain or aid the supply or maintenance of —

(*a*) holiday or school camps, especially for young persons attending continuation schools;

(*b*) centres and equipment for physical training, playing fields (other than the ordinary playgrounds of public elementary schools not provided by the local education authority), school baths, school swimming baths;

(*c*) other facilities for social and physical training in the day or evening.

Medical inspection of schools and educational institutions.

18. — (1) The local education authority for the purposes of Part II. of the Education Act, 1902, shall have the same duties and powers with reference to making provision for the medical inspection and treatment of children and young persons attending —

(i) secondary schools provided by them;

52 & 53 Vict. c. 40.

(ii) any school to the governing body of which, in pursuance of any scheme made under the Welsh Intermediate Education Act, 1889, any payments are made out of any general fund administered by a local education authority as a governing body under that Act, and any school of which a local education authority are the governing body under that Act;

(iii) continuation schools under their direction and control; and

(iv) such other schools or educational institutions (not being elementary schools) provided by them as the Board direct;

as a local education authority for the purposes of Part III. of the Education Act, 1902, have under paragraph (*b*) of subsection (1) of section thirteen of the Education (Administrative Provisions) Act, 1907, with reference to children attending public elementary schools, and may exercise the like powers as respects children and young persons

attending any school or educational institution, whether aided by them or not, if so requested by or on behalf of the persons having the management thereof.

9 Edw. 7. c. 13.

(2) The Local Education Authorities (Medical Treatment) Act, 1909, shall apply where any medical treatment is given in pursuance of this section as it applies to treatment given in pursuance of section thirteen of the Education (Administrative Provisions) Act, 1907.

Nursery schools.

19. — (1) The powers of local education authorities for the purposes of Part III. of the Education Act, 1902, shall include power to make arrangements for —

(*a*) supplying or aiding the supply of nursery schools (which expression shall include nursery classes) for children over two and under five years of age, or such later age as may be approved by the Board of Education, whose attendance at such a school is necessary or desirable for their healthy physical and mental development; and

(*b*) attending to the health, nourishment, and physical welfare of children attending nursery schools.

(2) Notwithstanding the provisions of any Act of Parliament the Board of Education may, out of moneys provided by Parliament, pay grants in aid of nursery schools, provided that such grants shall not be paid in respect of any such school unless it is open to inspection by the local education authority, and unless that authority are enabled to appoint representatives on the body of managers to the extent of at least one-third of the total number of managers, and before recognising any nursery school the Board shall consult the local education authority.

Education of physically defective and epileptic children. 4 & 5 Geo. 5. c. 45.

20. — A local education authority shall make arrangements under the Elementary Education (Defective and Epileptic Children) Acts, 1899 to 1914, for ascertaining what children in their area are physically defective or epileptic within the meaning of those Acts, and the provisions of the Elementary Education (Defective and Epileptic Children) Act, 1914, relating to mentally defective children, shall be extended so as to apply to physically defective and epileptic children, and accordingly that Act shall have effect as if references therein to mentally de-

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fective children included references to physically defective and epileptic children.

Powers for the education of children in exceptional circumstances.

21. Where a local education authority for the purposes of Part III. of the Education Act, 1902, are satisfied in the case of any children that, owing to the remoteness of their homes or the conditions under which the children are living, or other exceptional circumstances affecting the children, those children are not in a position to receive the full benefit of education by means of the ordinary provision made for the purpose by the authority, the authority may, with the approval of the Board of Education, make such arrangements, either of a permanent or temporary character, and including the provision of board and lodging, as they think best suited for the purpose of enabling those children to receive the benefit of efficient elementary education, and may for that purpose enter into such agreement with the parent of any such child as they think proper:

Provided that where a child is boarded out in pursuance of this section the local education authority shall, if possible, and, if the parent so requests, arrange for the boarding out being with a person belonging to the religious persuasion of the child's parents.

Amendment of Education (Choice of Employment) Act, 1910. 10 Edw. 7. and 1 Geo. 5. c. 37.

22. Section one of the Education (Choice of Employment) Act, 1910, which confers on certain local education authorities the power of assisting boys and girls with respect to the choice of employment, shall have effect as if "eighteen years of age" were therein substituted for "seventeen years of age."

Power to aid research.

23. With a view to promoting the efficiency of teaching and advanced study, a local education authority for the purposes of Part II. of the Education Act, 1902, may aid teachers and students to carry on any investigation for the advancement of learning or research in or in connection with an educational institution, and with that object may aid educational institutions.

Provision of maintenance allowances.

24. It is hereby declared that the powers as to the provision of scholarships conferred by subsection (2) of section twenty-three of the Education Act, 1902, and by section eleven of the Education (Administrative Provisions) Act, 1907, include a power to provide allowances for maintenance.

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Provisions as to medical treatment.

25. — A local education authority shall not, in exercise of the powers conferred upon them by paragraph (*b*) of subsection (1) of section thirteen of the Education (Administrative Provisions) Act, 1907, or by this Act, establish a general domiciliary service of treatment by medical practitioners for children or young persons, and in making arrangements for the treatment of children and young persons a local education authority shall consider how far they can avail themselves of the services of private medical practitioners.

Abolition of Fees in Public Elementary Schools.

Abolition of fees in public elementary schools. 6 Edw. 7. c. 57. 9 Edw. 7. c. 13.

26. — (1) No fees shall be charged or other charges of any kind made in any public elementary school, except as provided by the Education (Provision of Meals) Act, 1906, and the Local Education Authorities (Medical Treatment) Act, 1909.

(2) During a period of five years from the appointed day the Board of Education shall in each year, out of moneys provided by Parliament, pay to the managers of a school maintained but not provided by a local education authority in which fees were charged immediately before the appointed day, the average yearly sum paid to the managers under section fourteen of the Education Act, 1902, during the five years immediately preceding the appointed day.

(3) Nothing in this Act shall affect the provisions of section nine of the Elementary Education (Blind and Deaf Children) Act, 1893, or of section eight of the Elementary Education (Defective and Epileptic Children) Act, 1899. 62 & 63 Vict. c. 32.

Administrative Provisions.

Voluntary inspection of schools.

27. If the governing body of any school or educational institution not liable to inspection by any Government department, or, if there is no governing body, the headmaster, requests the Board of Education to inspect the school or institution and to report thereon, the Board of Education may do so, if they think fit, free of cost; but this section shall be without prejudice to the provisions relating to the Central Welsh Board contained in subsection (1) of section three of the Board of Education Act, 1899. 62 & 63 Vict. c. 33.

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Collection of information respecting schools.

28. — (1) In order that full information may be available as to the provision for education and the use made of such provision in England and Wales, —

(*a*) It shall be the duty of the responsible person as hereinafter defined, in respect of every school or educational institution not in receipt of grants from the Board of Education, to furnish to the Board of Education in a form prescribed by the Board —

(i) in the case of a school or educational institution existing at the appointed day, within three months of that day;

(ii) in the case of a school or educational institution opened after the appointed day, within three months of the opening thereof;

the name and address of the school or institution and a short description of the school or institution:

(*b*) It shall be the duty of every such responsible person when required by the Board of Education to furnish to the Board such further particulars with respect to the school or institution as may be prescribed by regulations made by the Board:

Provided that the Board may exempt from both or either of the above obligations any schools or educational institutions with respect to which the necessary information is already in the possession of the Board or is otherwise available.

(2) If the responsible person fails to furnish any information required by this section, he shall be liable on summary conviction to a penalty not exceeding ten pounds, and to a penalty not exceeding five pounds for every day on which the failure continues after conviction therefor.

(3) For the purposes of this section "the responsible person" means the secretary or person performing the duty of secretary to the governing body of the school or institution, or, if there is no governing body, the headmaster or person responsible for the management of the school or institution.

(4) Any regulations made by the Board of Education under this section with respect to the particulars to be

furnished shall be laid before Parliament as soon as may be after they are made. A.D. 1918.

Provisions with respect to appointment of certain classes of teachers.

29. — (1) Notwithstanding anything in the Education Act, 1902, the appointment of all teachers of secular subjects not attached to the staff of any particular public elementary school and teachers appointed for the purpose of giving practical instruction, pupil teachers, and student teachers, shall be made by the local education authority, and it is hereby declared that the local education authority have power to direct the managers of any public elementary schools not provided by them to make arrangements for the admission of any such teachers to the schools.

(2) The provisions of subsection (3) of section seven of the Education Act, 1902, shall apply to any question which arises under this section between the local education authority and the managers of a school.

Provisions as to closing of schools.

30. — (1) The managers of a public elementary school not provided by the local education authority, if they wish to close the school, shall give eighteen months' notice to the local education authority of their intention to close the school, and a notice under this provision shall not be withdrawn except with the consent of the local education authority.

(2) If the managers of a school who have given such a notice are unable or unwilling to carry on the school up to the expiration of the period specified in the notice, the school house shall be put at the disposal of the local education authority, if the authority so desire, for the whole or any part of the period, free of charge, for the purposes of a school provided by them, but subject to an obligation on the part of the authority to keep the school house in repair and to pay any outgoings in respect thereof, and to allow the use of the school house and the school furniture by the persons who were the managers of the school to the like extent and subject to the like conditions as if the school had continued to be carried on by those managers.

The use by the authority of the school house during such period for the purposes of a school provided by them shall not be deemed, for the purposes of section eight of the

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Education Act, 1902, to constitute the provision of a new school.

Grouping of non-provided schools of the same denominational character.

31. Where there are two or more public elementary schools not provided by the local education authority of the same denominational character in the same locality, the local education authority, if they consider that it is expedient for the purpose of educational efficiency and economy, may, with the approval of the Board of Education, give directions for the distribution of the children in those schools according to age, sex, or attainments, and otherwise with respect to the organisation of the schools; and for the grouping of the schools under one body of managers constituted in the manner provided by subsection (2) of section twelve of the Education Act, 1902:

Provided that, if the constitution of the body of managers falls to be determined by the Board of Education under that section, the Board shall observe the principles and proportions prescribed by sections six and eleven of that Act; and that, if the managers of a school affected by any directions given under this section request a public inquiry, the Board shall hold a public inquiry before approving those directions.

Provisions relating to central schools and classes. 3 Edw. 7. c. 24.

32. — (1) Notwithstanding the provisions of section six of the Education Act, 1902, or, in the case of London, subsection (1) of section two of the Education (London) Act 1903, as to the appointment of managers, any public elementary school which in the opinion of the Board is organised for the sole purpose of giving advanced instruction to older children may be managed in such manner as may be approved by the local education authority, and, in the case of a school not provided by that authority, also by the managers of the school.

(2) Notwithstanding anything contained in sections six and eight of the Education Act, 1902, or in section two of the Education (London) Act, 1903, the provision of premises for classes in practical or advanced instruction for children attending from more than one public elementary school shall not be deemed to be the provision of a new public elementary school, and any class conducted in such premises may be managed in such manner as may be approved by the local education authority.

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Saving for certain statutory provisions.

33. Except as expressly provided by this Act, nothing in this Act shall affect the provisions of the Education Acts relating to public elementary schools not provided by the local education authority or the provisions of Part II. of the Education Act, 1902.

Acquisition of land by local education authority.

9 Edw. 7. c. 44.

34. — (1) A local education authority may be authorised to purchase land compulsorily for the purpose of any of their powers or duties under the Education Acts, by means of an order submitted to the Board of Education and confirmed by the Board in accordance with the provisions contained in paragraphs (1) to (13) of the First Schedule to the Housing, Town Planning, &c. Act, 1909, and those provisions shall have effect for the purpose, with the substitution of the Board of Education for the Local Government Board, of the local education authority for the local authority, and of references to the Education Acts for references to "this Act":

Provided that —

(*a*) the Board of Education shall not confirm any such order even when unopposed if they are of opinion that the land is unsuited for the purpose for which it is proposed to be acquired;

(*b*) an order for the compulsory purchase of land in the administrative county of London shall be subject to the provisions of subsection (2) of section two of the Education (London) Act, 1903;

(*c*) an order for the compulsory purchase of land which by section forty-five of the Housing, Town Planning, &c., Act, 1909, is exempt from compulsory acquisition for the purposes of Part III. of the Housing of the Working Classes Act, 1890, shall be provisional only and shall not have effect unless and until it is confirmed by Parliament.

53 & 54 Vict. c. 70.

(2) The powers given by this section in relation to the compulsory purchase of land by the local education authority shall be in substitution for any other powers existing for that purpose, but without prejudice to any powers conferred by any Provisional Order confirmed by Parliament before the appointed day.

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Power to provide elementary schools outside area.

35. A local education authority may, with the consent of the Board of Education, who shall consult the authority of the area in which the proposed site is situated, provide a public elementary school, in cases where it appears convenient to do so, on a site outside their area for the use of children within their area, and for the purposes of the Education Acts a school so provided shall be deemed to be situated within the area of the authority.

Amendments with respect to the allocation of expenses to particular areas.

36. — (1) It shall not be obligatory on a county council to charge on or raise within particular areas any portion of such expenses as are mentioned in paragraph (*c*) or paragraph (*d*) of subsection (1) of section eighteen of the Education Act, 1902, and accordingly each of those paragraphs shall have effect as if for the word "shall" there was substituted the word "may" and as if the words "less than one half or" were omitted therefrom; and, where before the passing of this Act any portion of such expenses has been charged on or allocated to any area, the county council may cancel or vary the charge or allocation.

(2) Before charging any expenses under section eighteen (1) (*a*) of the Education Act, 1902, on any area situate within a borough or urban district the council of which is an authority for the purposes of Part III. of the Education Act, 1902, a county council shall consult the council of the borough or urban district concerned.

Provisions as to expenses of Provisional Orders, &c.

37. Any expenses incurred by a council in connection with any Provisional Order for the purposes of the Education Acts, or any Order under this Act for the purpose of the acquisition of land, shall be defrayed as expenses of the council under the Education Act, 1902, and the council shall have the same power of borrowing for the purpose of those expenses as they have under section nineteen of the Education Act, 1902, for the purpose of the expenses therein mentioned.

Expenses of education meetings, conferences, &c.

38. Any council having powers under the Education Acts may, subject to regulations made by the Board of Education, defray as part of their expenses under those Acts any reasonable expenses incurred by them in paying subscriptions towards the cost of, or otherwise in connection

with, meetings or conferences held for the purpose of discussing the promotion and organisation of education or educational administration, and the attendance of persons nominated by the council at any such meeting or conference: Provided that —

(*a*) the expenses of more than three persons in connection with any meeting or conference shall not be paid except with the previous sanction of the Board of Education;

(*b*) payments for travelling expenses and subsistence shall be in accordance with the scale adopted by the council;

(*c*) expenses shall not be paid in respect of any meeting or conference outside the United Kingdom unless the Board of Education have sanctioned the attendance of persons nominated by the council at the meeting or the conference;

(*d*) no expenses for any purpose shall be paid under this section without the approval of the Board of Education, unless expenditure for the purpose has been specially authorised or ratified by resolution of the council, after special notice has been given to members of the council of the proposal to authorise or ratify the expenditure, or, where a council has delegated its powers under this section to the education committee, by resolution of that committee after like notice has been given to the members thereof.

Power to pay expenses of prosecution for cruelty.

39. The powers of a local education authority for the purposes of Part III. of the Education Act, 1902, shall include a power to prosecute any person under section twelve of the Children Act, 1908, where the person against whom the offence was committed was a child within the meaning of this Act, and to pay any expenses incidental to the prosecution.

Public inquiries by Board of Education.

40. — (1) The Board of Education may hold a public inquiry for the purpose of the exercise of any of their powers or the performance of any of their duties under the Education Acts.

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(2) The following provisions shall (except as otherwise provided by the Education Acts) apply to any public inquiry held by the Board of Education: —

(*a*) The Board shall appoint a person or persons to hold the inquiry:

(*b*) The person or persons so appointed shall hold a sitting or sittings in some convenient place in the neighbourhood to which the subject of the inquiry relates, and thereat shall hear, receive, and examine any evidence and information offered, and hear and inquire into the objections or representations made respecting the subject matter of the inquiry, with power from time to time to adjourn any sitting:

(*c*) Notice shall be published in such manner as the Board direct of every such sitting, except an adjourned sitting, seven days at least before the holding thereof:

(*d*) The person or persons so appointed shall make a report in writing to the Board setting forth the result of the inquiry and the objections and representations, if any, made thereat, and any opinion or recommendations submitted by him or them to the Board:

(*e*) The Board shall furnish a copy of the report to any local education authority concerned with the subject matter of the inquiry, and, on payment of such fee as may be fixed by the Board, to any person interested:

(*f*) The Board may, where it appears to them reasonable that such an order should be made, order the payment of the whole or any part of the costs of the inquiry either by any local education authority to whose administration the inquiry appears to the Board to be incidental, or by the applicant for the inquiry, and may require the applicant for an inquiry to give security for the costs thereof:

(*g*) Any order so made shall certify the amount to be paid by the local education authority or the applicant, and any amount so certified shall, without prejudice to the recovery thereof as a debt due to

the Crown, be recoverable by the Board summarily as a civil debt from the authority or the applicant as the case may be.

Inspection of minutes.

41. The minutes of the proceedings of a local education authority and, where a local education authority delegate to their education committee any powers and the acts and proceedings of the education committee as respects the exercise of those powers are not required to be submitted to the council for their approval, the minutes of the proceedings of the education committee relating to the exercise of those powers, shall be open to the inspection of any ratepayer at any reasonable time during the ordinary hours of business on payment of a fee of one shilling, and any ratepayer may make a copy thereof or take an extract therefrom.

Payments to the Central Welsh Board.

42. — (1) For the yearly sum payable to the Central Welsh Board under the scheme regulating the intermediate and technical education fund of any county, as defined by the Welsh Intermediate Education Act, 1889, there shall be substituted —

(*a*) a yearly sum equal to a percentage not exceeding twenty-two and a half per cent. fixed from time to time at a uniform rate for every county by the Central Welsh Board of the sum produced by a rate of one halfpenny in the pound for the preceding year, calculated in the manner provided by subsection (3) of section eight of the Welsh Intermediate Education Act, 1889; and

(*b*) a yearly sum equal to five per cent of the net income for the preceding year of any endowment comprised in the intermediate and technical education fund of the county, or, in the alternative, for each year during such period as may be agreed with the Central Welsh Board, such yearly sum as that Board may agree to accept in lieu thereof.

(2) For the purpose of ascertaining the said net income there shall be deducted from the gross income all proper expenses and outgoings in respect of administration and management of the endowment (including charges for interest on and repayment of loans and replacement of

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capital), and any sums required by the scheme to be treated as capital, and the term "endowment" shall include augmentations acquired by the investment of surplus income whether derived from endowment or county rate, or from any other source, but not property occupied for the purposes of the scheme.

(3) The power of charging capitation fees for scholars offered for examination conferred on the Central Welsh Board by the scheme of the thirteenth day of May, eighteen hundred and ninety-six, regulating the Central Welsh Intermediate Education Fund shall cease.

(4) The provisions of this section shall have effect and be construed as part of the schemes regulating the Central Welsh Intermediate Education Fund and the intermediate and technical education funds of counties in Wales and Monmouthshire, and may be repealed or altered by future schemes accordingly.

Evidence of certificates &c. issued by local education authorities.

43. All orders, certificates, notices, requirements, and documents of a local education authority under the Education Acts, if purporting to be signed by the clerk of the authority or of the education committee, or by the director of, or secretary for, education, shall until the contrary is proved be deemed to be made by the authority and to have been so signed, and may be proved by the production of a copy thereof purporting to have been so signed.

Education Grants.

Education grants.

44. — (1) The Board of Education shall, subject to the provisions of this Act, by regulations provide for the payment to local education authorities out of moneys provided by Parliament of annual substantive grants in aid of education of such amount and subject to such conditions and limitations as may be prescribed in the regulations, and nothing in any Act of Parliament shall prevent the Board of Education from paying grants to an authority in respect of any expenditure which the authority may lawfully incur.

(2) Subject to the regulations made under the next succeeding subsection, the total sums paid to a local education authority out of moneys provided by Parliament and the local taxation account in aid of elementary education

or education other than elementary, as the case may be, shall not be less than one half of the net expenditure of the authority recognised by the Board of Education as expenditure in aid of which parliamentary grants should be made to the authority, and, if the total sums payable out of those moneys to an authority in any year fall short of one half of that expenditure, there shall be paid by the Board of Education to that authority, out of moneys provided by Parliament, a deficiency grant equal to the amount of the deficiency, provided that a deficiency grant shall not be so paid as to make good to the authority any deductions made from a substantive grant.

(3) The Board of Education may make regulations for the purpose of determining how the amount of any deficiency grant payable under this section shall be ascertained and paid, and those regulations shall, if the Treasury so direct, provide for the exclusion in the ascertainment of that amount of all or any sums paid by any Government department other than the Board of Education and of all or any expenditure which in the opinion of the Board of Education is attributable to a service in respect of which payments are made by a Government department other than the Board of Education.

(4) The fee grant under the Elementary Education Act, 1891, as amended by the Elementary Education (Fee Grant) Act, 1916, the aid grant under section ten of the Education Act, 1902, and the small population grant under section nineteen of the Elementary Education Act, 1876, as amended by the Education Code (1890) Act, 1890, and the Education (Small Population Grants) Act, 1915, shall cease on the appointed day.

54 & 55 Vict. c. 56.
6 & 7 Geo. 5. c. 35.
39 & 40 Vict. c. 79.
53 & 54 Vict. c. 22.
5 & 6 Geo. 5. c. 95.

(5) If, by reason of the failure of an authority to perform its duties under the Education Acts or to comply with the conditions on which grants are made, the deficiency grant is reduced or a deduction is made from any substantive grant exceeding five hundred pounds or the amount which would be produced by a rate of a halfpenny in the pound whichever is the less, the Board of Education shall cause to be laid before Parliament a report stating the amount of and the reasons for the reduction or deduction.

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(6) Any regulations made by the Board of Education for the payment of grants shall be laid before Parliament as soon as may be after they are made.

Educational Trusts.

Power to constitute official trustees of educational trust property.

45. — (1) His Majesty may by Order in Council constitute and incorporate with power to hold land without licence in mortmain one or more official trustees of educational trust property, and may apply to the trustee or trustees so constituted the provisions of the Charitable Trusts Acts, 1853 to 1914, relating to the official trustee of charity lands and the official trustees of charitable funds so far as they relate to endowments which are held for or ought to be applied to educational purposes.

(2) On the constitution of an official trustee or official trustees of educational trust property, —

(*a*) all land or estates or interests in land then vested in the official trustee of charity lands which are held by him as endowments for solely educational purposes, and

(*b*) all securities then vested in the official trustees of charitable funds which those trustees certify to be held by them as endowments for solely educational purposes,

shall by virtue of this Act vest in the official trustee or trustees of educational trust property upon the trusts and for the purposes for which they were held by the official trustee of charity lands and the official trustees of charitable funds, and, on such a certificate by the official trustees of charitable funds as aforesaid being sent to the person having charge of the books or registers in which any such securities are inscribed or registered, that person shall make such entries in the books or registers as may be necessary to give effect to this section.

(3) If any question arises as to whether an endowment or any part of an endowment is held for or ought to be applied to solely educational purposes, the question shall be determined by the Charity Commissioners.

Exemption of assurance of property for educational purposes from certain restrictions under the Mortmain Acts.
51 & 52 Vict. c. 42.
54 & 55 Vict. c. 73.
55 & 56 Vict. c. 11.
55 & 56 Vict. c. 29.

46. — (1) Any assurance, as defined by section ten of the Mortmain and Charitable Uses Act, 1888, of land or personal estate to be laid out in the purchase of land for educational purposes, whether made before or after the passing of this Act, shall be exempt from any restrictions of the law relating to Mortmain and Charitable Uses, and the Mortmain and Charitable Uses Acts, 1888 and 1891, and the Mortmain and Charitable Uses Act Amendment Act, 1892, shall not apply with respect to any such assurance.

(2) Subsection (1) of section ten of the Technical and Industrial Institutions Act, 1892, so far as it relates to the enrolment in the books of the Charity Commissioners of every conveyance or assurance of land for the purposes of institutions established under that Act, is hereby repealed.

(3) Every assurance of land or personal estate to be laid out in the purchase of land for educational purposes, including every assurance of land to any local authority for any educational purpose or purposes for which such authority is empowered by any Act of Parliament to acquire land, shall be sent to the offices of the Board of Education in London for the purpose of being recorded in the books of the Board as soon as may be after the execution of the deed or other instrument of assurance, or in the case of a will after the death of the testator.

Appointment of new trustees under scheme.

47. Where, under any scheme made before the passing of this Act relating to an educational charity, the approval of the Board of Education is required to the exercise by the trustees under the scheme of a power of appointing new trustees, the scheme shall, except in such cases as the Board may otherwise direct, have effect as if no such approval was required thereunder, and the Board may by order make such modifications of any such scheme as may be necessary to give effect to this provision.

General.

Definitions.

48. — (1) In this Act, unless the context otherwise requires, —

The expression "child" means any child up to the age when his parents cease to be under an obligation to

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cause him to receive efficient elementary instruction or to attend school under the enactments relating to elementary education and the byelaws made thereunder;

The expression "young person" means a person under eighteen years of age who is no longer a child;

The expression "parent" in relation to a young person includes guardian and every person who is liable to maintain or has the actual custody of the young person;

The expression "practical instruction" means instruction in cookery, laundrywork, housewifery, dairywork, handicrafts, and gardening, and such other subjects as the Board declare to be subjects of practical instruction;

The expression "school term" means the term as fixed by the local education authority;

The expression "sea service" has the same meaning as in the Merchant Shipping Acts, 1894 to 1916, and includes sea-fishing service;

Other expressions have the same meaning as in the Education Acts.

(2) In the Education Acts the expressions "employ" and "employment" used in reference to a child or young person include employment in any labour exercised by way of trade or for the purposes of gain, whether the gain be to the child or young person or to any other person.

Compensation to existing officers. 51 & 52 Vict. c. 41.

49. Section one hundred and twenty of the Local Government Act, 1888, which relates to compensation to existing officers shall apply to officers serving under local education authorities at the passing of this Act who, by virtue of this Act or anything done in pursuance or in consequence of this Act, suffer direct pecuniary loss by abolition of office or by diminution or loss of fees or salary, subject as follows: —

(*a*) Teachers in public elementary schools maintained by a local education authority shall be deemed to be officers serving under that authority;

(*b*) References to a county council shall include references to a borough or urban district council;

(*c*) The reference to "the passing of this Act" shall be construed as a reference to the date when the loss arose;

(*d*) The reference to the Acts and rules relating to His Majesty's civil service shall be construed as a reference to the Acts and rules which were in operation at the date of the passing of the Local Government Act, 1888; and

(*e*) Any expenses shall be paid by the council under whom the officer was serving at the date when the loss arose out of the fund or rate out of which the expenses of the council under the Education Acts are paid, and, if any compensation is payable otherwise than by way of an annual sum, the payment of that compensation shall be a purpose for which a council may borrow for the purposes of those Acts.

Extension of certain provisions of the Education Acts.

50. The provisions of the Education Acts mentioned in the first column of the First Schedule to this Act shall apply with respect to young persons, continuation schools, and the Education Acts and instruments made thereunder in like manner as they apply with respect to children, elementary schools, and the enactments mentioned in those provisions and instruments made under those enactments, and accordingly those provisions shall have effect as set out and modified in the second column of that schedule.

Repeals

51. The enactments mentioned in the Second Schedule to this Act are hereby repealed to the extent specified in the third column of that schedule.

Short title, construction, extent, and commencement.

52. — (1) This Act may be cited as the Education Act, 1918, and shall be read as one with the Education Acts, 1870 to 1916, and those Acts and this Act may be cited together as the Education Acts, 1870 to 1918, and are in this Act referred to as "the Education Acts."

(2) This Act shall not extend to Scotland or Ireland.

(3) This Act shall come into operation on the appointed day, and the appointed day shall be such day as the Board of Education may appoint, and different days may be appointed for different purposes and for different provisions

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of this Act, for different areas or parts of areas, and for different persons or classes of persons:

Provided that the appointed day for the purposes of subsections (1) and (2) of section eight shall not be earlier than the termination of the present war, and for the purposes of paragraph (iii) of subsection (2) of section thirteen shall not be earlier than three years after the passing of this Act, and that for a period of seven years from the appointed day the duty of the council of a county (other than the London County Council) shall not include a duty to establish certified schools for boarding and lodging physically defective and epileptic children.

SCHEDULES.

FIRST SCHEDULE.

EXTENSION OF ENACTMENTS.

Enactment extended.	Enactment as extended.
Elementary Education Act, 1870.	
s. 36	Every local education authority may, if they think fit, appoint an officer or officers to enforce the Education Acts and any byelaws, orders, or other instruments made thereunder with reference to the attendance of children or young persons at school. . . .
s. 81	Certificates, notices, requisitions, orders, precepts, and all documents required by the Education Acts or any regulations or byelaws made thereunder to be served or sent may, unless otherwise expressly provided, be served and sent by post, and, till the contrary is proved, shall be deemed to have been served and received respectively at the time when the letter containing the same would be delivered in the ordinary course of post; and in proving such service or sending it shall be sufficient to prove that the letter containing the certificate, notice, requisition, order, precept, or document was prepaid, and properly addressed, and put into the post.
s. 84	After the expiration of three months from the date of any order or requisition of the Board of Education under the Education Acts such order or requisition shall be presumed to have been duly made, and to be within the powers of the Education Acts, and no objection to the legality thereof shall be entertained in any legal proceeding whatever.

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Enactment extended.	Enactment as extended
Elementary Education Act, 1873. s. 24	With respect to proceedings before a court of summary jurisdiction for offences and penalties under the Education Acts or any byelaws made thereunder the following provisions shall have effect: —
	* * * *
	(4) Any justice may require by summons any parent or employer of a child or young person, required by the Education Acts or by any byelaws, orders, or other instruments made thereunder to attend school, to produce the child or young person before a court of summary jurisdiction, and any person failing, without reasonable excuse to the satisfaction of the court, to comply with such summons shall be liable to a penalty not exceeding twenty shillings.
Elementary Education Act, 1873.	(5) A certificate purporting to be under the hand of the principal teacher of a public elementary or continuation school, stating that a child or young person is or is not attending such school, or stating the particulars of the attendance of a child or young person at such school, shall be evidence of the facts stated in such certificate.
	(6) Where a child or young person is apparently of the age alleged for the purposes of the proceedings, it shall lie on the defendant to prove that the child or young person is not of such age.
	* * * *
	(8) Where a local education authority are, by reason of the default of the managers or pro-

Enactment extended.	Enactment as extended.
	prietor of an elementary or continuation school, unable to ascertain whether a child or young person who is resident within the district of such local education authority and attends such school attends school in conformity with the Education Acts or any byelaws, orders, or other instruments made thereunder, it shall lie on the defendant to show that the child or young person has attended school in conformity with the said Acts, byelaws, orders, or other instruments.
Elementary Education Act, 1876. s. 38	No legal proceedings for non-attendance or irregular attendance at school shall be commenced in a court of summary jurisdiction by any person appointed to carry out the Education Acts or any byelaws made thereunder, except by the direction of not less than two members of the education committee of a local education authority, or of any sub-committee appointed by that committee for school attendance purposes.

SECOND SCHEDULE.

Section 51.

ENACTMENTS REPEALED.

Session and Chapter.	Short Title.	Extent of Repeal.
33 & 34 Vict. c. 75.	The Elementary Education Act, 1870.	Section seventeen. In section twenty from the beginning of subsection (2) to the end of subsection (8). Section fifty-two. Sections sixty-seven to seventy-two. Section seventy-three.

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Session and Chapter.	Short Title.	Extent of Repeal.
33 & 34 Vict. c. 75 — *cont.*	The Elementary Education Act, 1870 — *cont.*	In section seventy-four the words "(3) Providing for the remission or payment of the whole or any part of the fees of any child where the parent satisfies the school board that he is unable from poverty to pay the same"; and the words from "Provided that any byelaw" down to the words "specified in such byelaw." Section ninety-four. Section ninety-seven from "Provided that no such minute" to the end of the section.
35 & 36 Vict. c. 27.	The Elementary Education Act Amendment Act, 1872.	The whole Act.
36 & 37 Vict. c. 86.	The Elementary Education Act, 1873.	Section fifteen. Section nineteen. Subsections (3) and (7) of section twenty-four, and in subsection (5) the words "or stating that a child has been certified by one of Her Majesty's Inspectors to have reached a particular standard of education."
39 & 40 Vict. c. 79.	The Elementary Education Act, 1876.	Section five. Section six. Section seven from "Provided that" to the words "by information and otherwise." Section nine. Section ten. In section eleven the words "who is under

Session and Chapter.	Short Title.	Extent of Repeal.
39 & 40 Vict. c. 79 — *cont.*	The Elementary Education Act, 1876 — *cont.*	"this Act prohibited "from being taken into "full time employment." Section nineteen. In section twenty-four from the beginning of the section down to "the parent of such "child"; and the words "and the persons by "whom and the form "in which certificates "of the said proficiency "and due attendance "are to be granted, "and with respect to "other matters relating thereto"; and the words "and other "records of such proficiency and attendance." Section twenty-eight. Section twenty-nine. Section thirty-five. In section thirty-seven the words from "And "every person who shall "fraudulently" down "to not exceeding fourteen days." Section thirty-nine. Section forty. Section forty-five. Section forty-six. Section forty-seven. Section fifty. The First Schedule.
43 & 44 Vict. c. 23.	The Elementary Education Act, 1880.	Section four. Section five.
53 & 54 Vict. c. 22.	The Education Code (1890) Act, 1890.	The whole Act.
54 & 55 Vict. c. 56.	The Elementary Education Act, 1891.	The whole Act.

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Session and Chapter.	Short Title.	Extent of Repeal.
55 & 56 Vict. c. 29.	The Technical and Industrial Institutions Act, 1892.	In section ten the words "but every such conveyance or assurance shall be enrolled as soon as may be in the books of the Charity Commissioners."
56 & 57 Vict. c. 51.	The Elementary Education (School Attendance) Act, 1893.	The whole Act.
60 & 61 Vict. c. 32	The School Board Conference Act, 1897.	The whole Act.
62 & 63 Vict. c. 13.	The Elementary Education (School Attendance) Act (1893) Amendment Act, 1899.	The whole Act.
63 & 64 Vict. c. 53.	The Elementary Education Act, 1900.	Section one. In section six the words "and in section four of the Elementary Education Act, 1880." Section seven.
1 Edw. 7. c. 11.	The Education Act, 1901.	The whole Act.
1 Edw. 7. c. 22.	The Factory and Workshop Act, 1901.	Sections sixty-eight to seventy-two except as respects children lawfully employed in factories and workshops at the commencement of this Act and except as respects Scotland and Ireland.
2 Edw. 7. c. 19.	The Education Act (1901) (Renewal) Act, 1902.	The whole Act.
2 Edw. 7. c. 42.	The Education Act, 1902.	In subsection (1) of section two from "Provided that the amount" to the end of the subsection.

Session and Chapter.	Short Title.	Extent of Repeal.
2 Edw. 7. c. 42—*cont.*	The Education Act, 1902—*cont.*	Subsection (5) of section seven from "and "in any case" to the end of the subsection. Section ten. Section fourteen. Subsection (7) of section seventeen. Subsection (1) of section twenty-one. In subsection (2) thereof the words "or provi- "sional order," in subsection (3) thereof the words "or any provi- "sional order made for "the purposes of such a "scheme." Subsections (5) and (10) of section twenty-three. In the Third Schedule, paragraph (1), from "except as respects" to the end of the paragraph, and paragraph (5).
3 Edw. 7. c. 10.	The Education (Provision of Working Balances) Act, 1903.	The whole Act.
3 Edw. 7. c. 24.	The Education (London) Act, 1903.	In the First Schedule, paragraphs (2) and (7).
7 Edw. 7. c. 43.	The Education (Administrative Provisions) Act, 1907.	Section four, without prejudice to the legality of anything retrospectively legalised thereby. In subsection (1) of section fourteen the words "or a ground of exemp- "tion for the purposes "of section nine of the "latter Act."

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Session and Chapter.	Short Title.	Extent of Repeal.
9 Edw. 7. c. 29.	The Education (Administrative Provisions) Act, 1909.	Section three, without prejudice to the legality of anything retrospectively legalised thereby.
5 & 6 Geo. 5. c. 95.	The Education (Small Population Grants) Act, 1915.	The whole Act.
6 & 7 Geo. 5. c. 35.	The Elementary Education (Fee Grant) Act, 1916.	The whole Act.

65TH CONGRESS, 3D SESSION.

H. R. 15400.

IN THE HOUSE OF REPRESENTATIVES.

JANUARY 30, 1919.

Mr. TOWNER introduced the following bill; which was referred to the Committee on Education and ordered to be printed.

A BILL

To create a Department of Education, to authorize appropriations for the conduct of said department, to authorize the appropriation of money to encourage the States in the promotion and support of education, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby created an executive department in the Government, to be called the Department of Education, with a Secretary of Education, who is to be the head thereof, to be appointed by the President, by and with the advice and consent of the Senate, who shall receive a salary of $12,000 per annum, and whose tenure of office shall be like that of the heads of other executive departments; and section one hundred and fifty-eight of the Revised Statutes is hereby amended to include such department, and the provisions of title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The said Secretary shall cause a seal of office to be made for such department of such device as the President shall approve, and judicial notice shall be taken of the said seal.

SEC. 2. That there shall be in said department an Assistant Secretary of Education to be appointed by the President, who shall receive a salary of $5,000 per year. He shall perform such duties as shall be prescribed by the Secretary or required by law. There shall also be one chief clerk and a disbursing clerk and such chiefs of bureaus and clerical assistants as may from time to time be authorized by Congress. The Auditor for the State and Other Departments shall receive and examine all accounts of salaries and incidental expenses of the office of the Secretary of Education and of all bureaus and offices under his direction and certify the balances arising thereon to the Division of

Bookkeeping and Warrants and send forthwith a copy of each certificate to the Secretary of Education.

SEC. 3. That there be transferred to the Department of Education the Bureau of Education and such educational war-emergency commissions or boards or educational activities already established by Act of Congress as in the judgment of the President should be transferred to the Department of Education.

The President of the United States is hereby empowered in his discretion to transfer to the Department of Education such offices, bureaus, divisions, boards, or branches of the Government connected with or attached to any of the executive departments, or organized independently of any department, devoted to educational matters which concern the United States as a whole or the educational system of any State or States of the Union, which in his judgment should be controlled by, or the functions of which should be exercised by, the Department of Education.

SEC. 4. That the office records and papers now on file in and pertaining exclusively to the business of any bureau, office, division, board, or branch of the public service transferred by this Act to the Department of Education, together with the furniture now in use in such bureau, office, division, board, or branch of the public service, shall be, and are hereby, transferred to the Department of Education.

SEC. 5. That the Secretary of Education shall have charge, in the buildings or premises occupied by or assigned to the Department of Education, of the library, furniture, fixtures, records, and other property pertaining to it, or hereafter acquired for use in its business; he shall be allowed to expend for periodicals and the purposes of the library and for rental of appropriate quarters for the accommodation of the Department of Education within the District of Columbia, and for all other incidental expenses, such sums as Congress may provide from time to time: *Provided, however,* That where any office, bureau, division, board, or branch of the public service transferred to the Department of Education by this Act, or by the President, as provided in this Act, is occupying rented buildings or premises, it may still continue to do so until other suitable quarters are provided for its use: *Provided further,* That all officers, clerks, and employees now employed in or by any bureau, office, division, board, or branch of public service by this Act transferred to the Department of Education are each and all hereby transferred to the said Department of Education at their present grades and salaries, except where otherwise provided in this Act: *And provided further,* That all laws prescribing the work and defining the duties of the several bureaus, offices, divisions, boards, or branches of public service by this Act transferred to and made part of the Department of Education shall,

so far as the same are not in conflict with the provisions of this Act, remain in full force and effect, to be executed under the direction of the Secretary of Education, to whom is hereby granted definite authority to readjust the work of any of the said bureaus, offices, boards, or branches of public service so transferred in such way as in his judgment will best accomplish the purposes of this Act.

SEC. 6. That all duties performed, and all power and authority now possessed or exercised by the head of any executive department in and over any bureau, office, officer, board, division, or branch of public service transferred by this Act to the Department of Education, or any business arising therefrom or pertaining thereto, or in relation to the duties performed by it and authority conferred by law upon such bureau, office, officer, board, division, or branch of public service, whether of an appellate or revisory character or otherwise, shall hereafter be vested in and exercised by the Secretary of Education.

SEC. 7. That the Secretary of Education shall annually at the close of each fiscal year make a report in writing to Congress, giving an account of all moneys received and disbursed by him and his department, and describing the work done by the department. He shall also make other reports as hereinafter provided. He shall also, from time to time, make such special investigations and reports as he may be required to do by the President, or by Congress, or as he himself may deem necessary.

SEC. 8. That it shall be the specific duty of the Department of Education to encourage the States in the development of public educational facilities, including public-health education, within the respective States.

In order that the encouragement of the States in the promotion of education may be carried out for the best interests of education and public health in the respective States, the Secretary of Education, subject to the approval of the President, is authorized to reorganize such bureaus, offices, boards, divisions, or branches of public service as are transferred to the Department of Education. In this reorganization he shall consider —

(1) The encouragement of the study and investigation of problems relating to the educational purposes set forth in this Act and to such other educational problems as may, in the judgment of the Secretary of Education, require attention and study. Research shall be undertaken directly by the Department of Education in the fields of (*a*) illiteracy; (*b*) immigrant education; (*c*) public-school education, and especially rural education; (*d*) public-health education and recreation; (*e*) the preparation and supply of competent teachers for the public schools; and (*f*) such other fields as come within the provisions of this Act or as

may come within the provisions of other Acts of Congress relating to the Department of Education.

(2) The encouragement of higher and professional education and the encouragement of learned societies, including the appointment of such commissions as the Secretary of Education may deem necessary.

(3) The encouragement of physical and health education and recreation, these terms to be inclusive of all public health questions relating to school children and to adults, and of social and recreational problems which relate not only to the native born but also and especially to the foreign-born population.

In order to carry out the provisions of this section the Secretary of Education is authorized to make such appointments or recommendations of appointments, in the same manner as provided for appointments in other departments, of such educational attachés to foreign embassies, and such investigators and representatives as may be needed, subject, however, to the appropriations that have been made or may be made to any bureau, office, board, division, or branch of public service which is transferred by this Act or may be transferred; and where appropriations have not been made the appropriation provided for in this section nine of this Act shall be available. All provisions of Congress for encouraging the States in the promotion of education, unless otherwise provided by law, shall be administered through and by this department.

SEC. 9. That the sum of $500,000 annually is hereby authorized to be available when appropriated for the purpose of paying salaries and conducting investigations and of paying all incidental expenses, including traveling expenses, and rent where necessary, and for the purpose of allowing the Department of Education to inaugurate a system of attachés to American embassies abroad to deal with educational matters. But this section is not to be construed as in any way interfering with any appropriation which has hitherto been made and which may hereafter be made to any bureau, office, division, board, or branch of public service, which is by this Act transferred to and made a part of the Department of Education, or which may hereunder be transferred by the President; and said appropriations are hereby continued in full force, to be administered by the Secretary of Education in such manner as is prescribed by law.

SEC. 10. That in order to encourage the States in the promotion of education, as hereinafter specified, there is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the following sums: For the fiscal year ending June thirtieth, nineteen hundred and twenty, and annually thereafter, $100,000,000.

SEC. 11. That in order to encourage the States to remove illiteracy, three-fortieths of the sum authorized by section ten of this Act shall be used for the instruction of illiterates ten years of age and over. Such instruction shall deal with the common-school branches and the duties of citizenship, and when necessary shall prepare for some definite occupation. Said sum shall be apportioned to the States in the proportion which their respective illiterate populations of ten years of age and over (not including foreign-born illiterates) bear to such total illiterate population of the United States, not including outlying possessions, according to the last preceding census of the United States.

SEC. 12. That in order to encourage the States in the Americanization of immigrants, three-fortieths of the sum authorized by section ten of this Act shall be used to teach immigrants ten years of age and over to speak and read the English language and the duties of citizenship, and to develop among them an appreciation of and respect for the civic and social institutions of the United States. The said sum shall be apportioned to the States in the proportions which their respective foreign-born populations bear to the total foreign-born population of the United States, not including outlying possessions, according to the last preceding census of the United States.

SEC. 13. That in order to encourage the States to equalize educational opportunities, five-tenths of the sum authorized by section ten of this Act shall be used in public schools of less than college grade for the partial payment of teachers' salaries, providing better instruction, extending school terms, and for improving rural schools and schools in sparsely settled localities, and otherwise for providing equally good schools and teachers for the children in the several States. The said sum shall be apportioned to the States in the proportions which the numbers of teachers in the public schools of the respective States bear to the total number of public-school teachers in the United States, not including outlying possessions, said apportionment to be based upon figures collected by the Department of Education: *Provided, however,* That no State shall share in the apportionment provided by this section of this Act unless such State shall require every public-school district to maintain a legal school for at least twenty-four weeks in each year, and unless such State shall have enacted and enforced an adequate compulsory school-attendance law, and unless such State shall have enacted and enforced laws requiring that the basic language of instruction in the common-school branches in all schools, public and private and parochial, shall be the English language only.

SEC. 14. That in order to encourage the States in the promotion of physical and health education and recreation two-tenths of the sum

authorized by section ten of this Act shall be used for physical education and recreation, the medical and dental examination of children of school age, the determination of mental and physical defects in such children, the employment of school nurses, the establishment and maintenance of school dental clinics, and the instruction of the people in the principles of health and sanitation. The said sum shall be apportioned to the States in the proportions which their respective entire populations bear to the total population of the United States, not including outlying possessions, according to the last preceding census of the United States.

SEC. 15. That in order to encourage the States in preparing teachers for the schools, particularly rural schools, three-twentieths of the sum authorized by section ten of this Act shall be used to prepare teachers, to encourage a more nearly universal preparation of prospective teachers, to extend the facilities for the improvement of teachers already in service, to encourage through the establishment of scholarships and otherwise a greater number of talented young people to make adequate preparation for public-school service, and otherwise to provide an increased number of trained and competent teachers. The said sum shall be apportioned to the States in the proportion which the numbers of teachers in the public schools of the respective States bear to the total number of public-school teachers in the United States, not including outlying possessions, said apportionment to be based on figures collected by the Department of Education.

SEC. 16. That in the event the allotments under sections eleven, twelve, thirteen, fourteen, and fifteen to any State aggregate less than $20,000 per annum and said State is willing to meet all the conditions of this Act and to provide $1 for each dollar of Federal money, either from State or local sources, or both, to the sum of $20,000 per annum, the Secretary of Education is authorized to make said allotment; and in order to guarantee to any State a minimum of not less than $20,000, provided said State meets the conditions of this Act as herein specified, an additional sum of $500,000 or as much thereof as may be needed, is hereby authorized annually.

SEC. 17. That in order to secure the benefits of the authorization made in section ten of this Act and of all or any of apportionments made in sections eleven, twelve, thirteen, fourteen, fifteen, and sixteen of this Act any State shall, through the legislative authority thereof, accept the provisions of this Act and designate its chief State educational authority, and give to the same all necessary power to act as herein provided in connection with the Department of Education in the administration of this Act in so far as it relates to the aiding of the

States in the promotion of education. In any State in which the legislature does not meet in nineteen hundred and nineteen, if the governor of that State, so far as he is authorized to do so, shall accept the provisions of this Act and designate the State's chief educational authority to act in connection with the Department of Education, the said Department of Education shall recognize such designation by the governor for the purposes of this Act until the legislature of such State meets in due course and has been in session sixty days. Any State may accept the provisions of any one or more of the respective apportionments herein authorized and may defer the acceptance of any one or more of said apportionments. In the acceptance of the provisions of this Act the legislature shall designate and appoint as custodian for all funds received as apportionments under the provisions of this Act its State treasurer, who shall receive and provide for the proper custody and disbursement of all money paid to the State from such apportionments, said disbursements to be made from warrants duly drawn by the State's chief educational authority which has been duly designated to act in connection with the Department of Education as provided in this section of this Act.

SEC. 18. That the Secretary of Education is authorized to prescribe a plan of keeping accounts of educational expenditures for use in the several States in so far as such expenditures relate to the provisions of this Act. The Secretary may prescribe or approve the forms to be used in keeping such school accounts and the making of such school records as in his judgment are required to insure the proper administration of the provisions of this Act. He shall appoint an auditor to have charge of such accounting in the several States and of the examination of such accounts, and he shall appoint such assistant auditors as may be necessary to aid in examining and verifying said accounts showing expenditure of moneys by the States for the purpose of meeting the provisions of this Act and of examining such other educational records as may be required.

SEC. 19. That in order to secure the benefits of the authorizations in sections ten and sixteen of this Act and of all or any of the apportionments made in sections eleven, twelve, thirteen, fourteen, and fifteen of this Act the State's chief educational authority which has been duly designated to act in connection with the Department of Education, as provided in section seventeen of this Act, shall present to the Secretary of Education plans and regulations for carrying out the provisions of this Act in said State, which plans shall specifically show courses of study and the standards of teacher preparation to be maintained. If said plans show that the State has in good faith made provisions for carrying out

the purposes and complying with the conditions of this Act, in so far as they relate to aiding such State in the promotion of education, the Secretary of Education shall apportion to the said State such fund or funds as said State may be entitled to under this Act: *Provided, however,* That no money appropriated shall be paid from any fund in any year to any State, unless a sum equally as large has been provided by said State, or by local authorities, or by both, for the removal of illiteracy, for the Americanization of immigrants, for the equalization of educational opportunites, for physical education, for teacher preparation, or such other purpose as the case may be, and said sum appropriated by the State shall not be less for the equalization of educational opportunities, the promotion of physical and health education, and the preparation of teachers, than that appropriated for the same purpose for the fiscal year next preceding the adoption of this Act: *And provided further,* That no such sum shall be used by any State, county, district, or local authority, directly or indirectly, for the purchase, rental, erection, preservation, or repair of any building or equipment, or for the purchase or rental of land, or for the support of any religious or privately endowed, owned, or conducted school or college, but only for schools entirely owned and controlled and conducted by the State or county or local authority, as may be provided for under the laws of said State.

SEC. 20. That the Secretary of the Treasury is hereby authorized to pay quarterly, on the first day of July, October, January, and April, to the treasurer of any State entitled to any apportionment, such apportionment as is properly certified to him by the Secretary of Education. Wherever any part of the fund apportioned annually to any State for any of the purposes named in sections eleven, twelve, thirteen, fourteen, and fifteen of this Act has not been expended for said purpose, a sum equal to such unexpended part shall be deducted from the next succeeding annual apportionment made to said State for said purpose. The Secretary of Education may withhold the apportionment of moneys to any State whenever it shall be determined that such moneys are not being expended for the purposes and under the conditions of this Act. If any portion of the moneys received by the treasurer of a State under this Act for any of the purposes herein provided shall, by action or contingency, be diminished or lost, it shall be replaced by such State, and until so replaced no subsequent apportionment for such purpose shall be paid to such State.

SEC. 21. That every State accepting the provisions of this Act shall, not later than September first of each year, make a report to the Secretary of Education, showing in such detail as he may prescribe the work done in said State in carrying out the purposes and provisions of

this Act, and the receipt and expenditure of moneys paid to said State under the conditions of this Act. If any State fails to make said report within the time prescribed the Secretary of Education may, in his discretion, discontinue immediately the payment of any moneys which have been apportioned under the terms of this Act to said State. The Secretary of Education, not later than December first of each year, shall make a report to Congress on the administration of sections ten, eleven, twelve, thirteen, fourteen, fifteen, sixteen, seventeen, eighteen, nineteen, and twenty of this Act, and shall include in said report a summary of the reports made to him by the several States. The Secretary of Education shall, at the same time, make such recommendations to define further the purposes and plans for Federal encouragement of the States in education as will, in his judgment, improve the administration of the moneys appropriated under sections ten, eleven, twelve, thirteen, fourteen, fifteen, and sixteen of this Act.

SEC. 22. That this Act shall take effect March fourth, nineteen hundred and nineteen, and all Acts and parts of Acts inconsistent with this Act are here repealed.

EDUCATION IN THE NEW PRUSSIA

Before the German Revolution was a month old the reform of the whole system of education became a burning question. The Socialist Herr Hänisch became Prussian Kultur-Minister, thus assuming responsibility for education, the relations between State and Church, and Kultur generally. The whole political development of Germany is largely dependent upon the solution of problems affecting religion; the struggle between Socialism and Lutheranism will be considerable and the struggle between Socialism and Roman Catholicism, which in Germany is an immensely powerful political organization, may in the end be decisive.

Herr Hänisch set to work immediately to organize the most sweeping changes; and by the end of November the Socialist Press was allowed to publish the following remarkable list of the thirty-two points of his program: —

A. General

1. The separation of Church and State has been settled in principle. 2. Religion has ceased to be an examination subject, and the introduction of unsectarian moral teaching is being prepared. 3. Supervision of schools by the local clergy and participation of the clergy in the district inspections are abolished. 4. Mixed education of boys and girls has already been introduced in some schools. 5. Teachers and scholars receive powers of self-government. 6. All chauvinism is banished from the instruction, and especially from the instruction in history. 7. Prussia will propose the assembly of a high school conference for the whole Empire. 8. The uniform school (Einheitsschule) is secured, and the abolition of all class schools will be begun immediately. 9. The office of Rector will be deprived of its autocratic character and built up upon a collegiate basis. 10. The school authorities are instructed to promote among teachers' unions and at official conferences discussions of educational and cultural questions of policy

in the spirit of the new age. 11. The Ministry of Education will include as representatives of the Socialist Party two Ministers, one Under-Secretary, one principal adviser and two assistant advisers. 12. Touch will be kept with champions of the new movement throughout the whole country, and a list will be made of suitable candidates for freshening the body of officials and teachers. 13. The leaving examination from the secondary schools will be transformed, and the number of examinations will be reduced. 14. The Prussian Ministry of Education claims a share of the confiscated Royal castles for the purposes of national education — as training schools, boarding schools, model seminaries, museums and national high schools. 15. Physical culture has been deprived of its military character.

B. Teachers

16. No teacher may in future be compelled to give religious education. 17. It has been proposed to the Ministry of War that all teachers shall be released immediately from their military obligations. 18. Work for the willing! Immediate provision of employment for teachers who return from the field by reducing the size of classes, filling of all vacant posts, and establishment of special courses. 19. The amnesty will be applied to all teachers who have received disciplinary punishment. 20. Teachers who have been punished for their political or religious convictions are to be reinstated. 21. The teachers will have representatives in the Government and in the school administration. The Socialist teacher Menzel has been appointed principal adviser in the ministry of Education. 22. Tried teachers will be appointed to local inspectorships of schools without special examinations.

C. Universities

23. Prominent representatives of scientific Socialism and of other tendencies which have hitherto been systematically excluded are to be appointed to university chairs. 24. A system of national high schools is to be built up on large lines, and to be placed in organic connection with existing schools and high schools. 25. The reorganization of the technical high schools will be effected in close connection with the universities. 26. The social, legal, and financial position of the assistant teachers in universities (Privatdozenten) is to be raised. 27. Freedom of doctrine in the universities is to be rid of its last fetters. 28. Professorial chairs and research institutes for sociology will be established.

D. General Culture

29. The theaters will be put under the Ministry of Education. The theater censorship has been abolished. 30. Opportunity for work, and relief where necessary, will be given to unemployed artists and writers on their return from the field. 31. The system of appointments will be reformed in association with the organizations of artists of every school. 32. The Royal theaters will become national theaters, and the Court orchestras will become national orchestras.

A few days after the issue of these thirty-two points Herr Hänisch published a further communication, which shows that he is anxious to guard against the accusation that he is abolishing religious education altogether. His intention seems to be that time shall be set apart for religious education; that teachers who are willing to do so shall continue to give religious education; and that the local clergy shall be permitted either to give religious education themselves in the schools, or to employ the regular teachers to give it.

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